DOCUMENT RESUME

ED 054 346 VT 013 460

AUTHOR	Gillie, Angelo C.; Olson, Richard R.
TITLE	Pennsylvania State University Associate Degree Technician Graduates: Some Demographic Variables.
INSTITUTION	Pennsylvania State Univ., University Park.
SPONS AGENCY	Pennsylvania State Dept. of Education, Harrisburg.
NOTE	100p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS	Associate Degrees, College Graduates, *Demography, *Drafting, *Electronics, Electronic Technicians, Employment Experience, *Employment Patterns, Graduate Surveys, Individual Characteristics, *Occupational Mobility, Questionnaires

ABSTRACT

As part of an overall study concerned with determining the relationships between the graduates of electronics and drafting design technology curriculums and various factors, this follow-up study of Pennsylvania graduates considers a number of demographic factors. Some of the factors are: (1) marital status, (2) salaries, (3) distance from hometown to jobs, (4) job changes, (5) degrees, (6) military experience, and (7) interrelationships among some of the above. A stratified random sample of 33 percent of the 6,200 graduates from 1955-1969 was surveyed on both first and present jobs to show job trends and mobility. The data are thoroughly displayed in tables and graphs. Related documents are available as VT 012 725 and VT 013 461. (GEB)

VOCATIONAL EDUCATION DEPARTMENT OF THE PENNSYLVANIA STATE UNIVERSITY

(21)

PENNSYLVANIA STATE UNIVERSITY ASSOCIATE DEGREE TECHNICIAN GRADUATES: SOME DEMOGRAPHIC VARIABLES

ANGELO C. GILLIE
assisted by
RICHARD R. OLSON

VOCATIONAL – INDUSTRIAL EDUCATION **Research Report**

MAY, 1971

1

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

PENNSYLVANIA STATE UNIVERSITY ASSOCIATE DEGREE TECHNICIAN GRADUATES: SOME DEMOGRAPHIC VARIABLES

ED054346

Angelo C. Gillie

assisted by

Richard Olson

The research reported herein was partially supported by The Center for the Study of Higher Education (P.S.U.), The Department of General Engineering (College of Engineering), and The Bureau of Vocational, Technical, and Continuing Education, State Department of Education, Commonwealth of Pennsylvania.

Department of Vocational Education
The Pennsylvania State University
University Park, Pennsylvania

May, 1971

ACKNOWLEDGMENTS

Several individuals have made meaningful contributions to the findings reported herein. Initial encouragement and advice was provided by Dr. Joseph T. Impellitteri, Chairman of Graduate Studies and Research of the Department of Vocational Education. Mr. Ernest R. Weidhaas, Assistant Dean for Commonwealth Campuses (College of Engineering), provided assistance in establishing communications with key faculty and administrators in the various campuses of the University. Special thanks are also given to Mr. Thomas Turnbaugh for the preparation of the many graphs. The author also wishes to express his appreciation to the various faculty and administrators who were so helpful with suggestions during the questionnaire design and pretesting phase.

The major financial support for this study of Commonwealth campus associate degree graduates, of which this is the fourth report, was derived from the Department of Vocational Education. It should be mentioned that significant financial assistance was given by The Center for the Study of Higher Education of the University, and the Department of General Engineering. This effort was also supported by the Bureau of Vocational, Technical and Continuing Education, Pennsylvania Department of Education.

The author is especially appreciative for the sustained efforts of Mr. Richard R. Olson and Mr. Edward D. Cory, who by and large were responsible for the collection of the data. Any errors which may appear in this report are those of the author.

TABLE OF CONTENTS

	Page
Acknowledgments	ii
Introduction	1
The Sample and Sampling Strategy	3
Age of Associate Degree Graduates	8
Number of Dependents and Marital Status	10
Initial Salaries	12
Distance Between Hometown High School and First Job	14
Present Salaries	16
Distance Between Hometown High School and Present Job	19
Simultaneous Job-Residence Changes	21
Simultaneous Job-Company Changes	22
Advanced Degrees	23
Military Experience	26
Interrelationships Among Some Variables	27
References	30
Appendices	31
I. Tables	32
II. Figures	48
III. Cover Letter and Questionnaire	62
IV. Means and Standard Deviations for Selected Variables: EET	67
V. Means and Standard Deviations for Selected Variables: DDT	82

INTRODUCTION

The study is based on a total population of about 6,200 graduates of electronics and drafting design curriculums from each of the years 1955-1969. Thirty-three percent of this population was selected in a stratified random manner. Fifty-three percent of our sample responded after a series of three follow-up letters. Eleven percent of the questionnaires were returned by the Post Office as being undeliverable. A ten percent random sample was taken from the remaining non-respondents for the purpose of comparing them with the original respondents. They were contacted by telephone, which resulted in an eighty-seven percent response from this group.

The pooled variance t-test was used to compare these two groups on 59 variables and it was found that the respondent group was not significantly different from the non-respondents. On that basis, inferences drawn from the respondents may be generalized to the entire sample.

The variables considered in this fourth report deal with a number of demographic factors, including:

a. Marital status and number of dependents;
b. First and present salaries;
c. Distance from hometown high school for first and present jobs;
d. Job changing as associated with residence and company;
e. Advanced degrees;
f. Military experience;
g. Interrelationships among some of the above.

It was felt that reporting the above simply as demographic information would be of value in contributing to what we know about technicians. Also, it is anticipated the information presented in this report will be utilized in arriving at implications for curriculum

to be presented in the fifth and final report.

Since one of the chief purposes of this report is to present in descriptive form a substantial amount of information which was obtained from the analysis of a large amount of data, heavy reliance has been placed on the utilization of tables and graphical displays.

THE SAMPLE AND SAMPLING STRATEGY

The population consisted of the associate degree graduates of the electrical-electronics technology (EET) and drafting design technology (DDT) programs of the Commonwealth campuses of The Pennsylvania State University for the graduation years of 1955 through 1969 (inclusive). The entire population consisted of about 6,200 associate degree graduates. A ten step stratified random sampling procedure (I:87-88) was used to obtain the sample from this entire population (the sampling strategy is illustrated in the flow diagram of Figure A. A random sample of thirty-three percent of the entire population was selected as our sample.

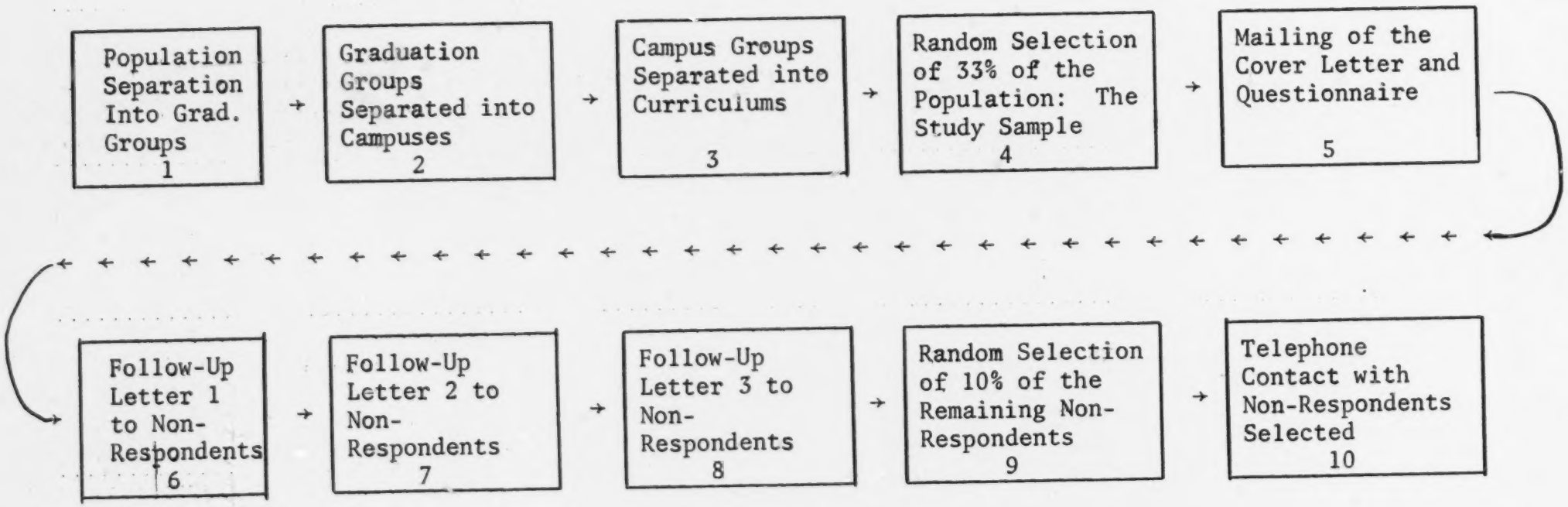
A follow-up letter was sent approximately every two weeks, for a total of three tries. Eleven percent of the questionnaires were returned by the postal authorities as undeliverable (see Table 16 in the Appendix). After a period of around six weeks from the time the questionnaire was first sent out, the second phase of our strategy was put into effect. The non-respondent group (excluding those returned by the Post Office Department) represented about 36% of the original sample and was given special treatment. A ten percent stratified random sample from this group was taken.* They were contacted either at home or at their place of employment by telephone. The approach was successful, as almost nine-tenths of the special telephone sample (87%) completed and returned their questionnaires (see Table 16). This provided us with some basis for statistically comparing the original respondents with the non-respondents (the assumption being made that the telephone respondents

---

*This actually became 12.7% because of rounding within each stratum.

SAMPLING STRATEGY FLOW DIAGRAM

Figure A


Population Separation Into Grad. Groups 1
Graduation Groups Separated into Campuses 2
Campus Groups Separated into Curriculums 3
Random Selection of 33% of the Population: The Study Sample 4
Mailing of the Cover Letter and Questionnaire 5
Follow-Up Letter 1 to Non-Respondents 6
Follow-Up Letter 2 to Non-Respondents 7
Follow-Up Letter 3 to Non-Respondents 8
Random Selection of 10% of the Remaining Non-Respondents 9
Telephone Contact with Non-Respondents Selected 10

are typical of the non-respondent group since they were also selected in a random fashion).

Results: The original sample size was 2,098 associate degree graduates (1,100 DDT and 998 EET graduates). The sampling results were as follows:

1. About 230 questionnaires (11% of the entire sample) were returned by the postal authorities because the graduate had moved and no forwarding address was available;
2. About 1,100 (53% of the total) were completed and returned by the regular mailing and three follow-up letter strategy;
3. Ninty-seven graduates were selected for the telephone group (which represented 4.8% of the total sample). Eighty-four of them filled out and returned the questionnaire (a response rate of 87%).

Note: A brief explanation as to why it was felt that obtaining a high response rate from the telephone group was essential is in order. Since the persons in the telephone group were selected on a random basis, it could be assumed they would be representative of the non-respondent group. Comparing the questionnaire returns of this group with those of the original respondents would be an acceptable basis for examining these two groups (i.e., the original respondents and the telephone group) for similarities and differences.

Comparing the Original and the Telephone Follow-Up Groups: The questionnaire received from individuals in the two groups (regular respondents and the telephone group) were compared in order to identify any significant differences in their responses. We elected to use a t-statistic for this analysis with the following assumptions:

1. The population from which the sample was taken is normally distributed over the criterion measures;

2. The sample is representative of the population being studied, since a stratified random sampling strategy was utilized.

We then had to select the t-statistic that was most appropriate for our purpose. In comparing the size of the original group of respondents to that of the telephone follow-up group, we found that the ratio is about 13/1. Since the size of the two groups are not equal, the assumption of homogeneity of variances becomes important.

In order to carry out the analysis, a pooled t-test (2:197-198) was used. One of the required assumptions of this test is that the variances of the two groups are equal. A casual inspection of the variances showed that they appeared to be approximately equal. It was assumed that the variances of the original group of respondents and the follow-up group were equal. If they were not equal (i.e., if the assumption is false) the result may be either an increase or a decrease in alpha. If the variances are equal, the actual value of alpha (α) is equal to the value selected (i.e., $\alpha = .05$). If the variances are not equal the result is to increase or decrease alpha and therefore increase or decrease the probability of a type one error (in this case the chance of finding a difference between groups is either greater or less than alpha).

These two groups were tested for the following items:

1. First job salary;
2. Number of miles between first job and hometown high school;
3. Present job salary;
4. Number of miles between present job and hometown high school;
5. Number of times there has been a simultaneous job and residence change;

6. Number of times there has been a simultaneous job change and change in company or business firm;
7. The respondent's evaluation of the course work. (There was a total of 48 items in this category.)

A total of 59 t-tests were conducted for each of the three graduation groups in each curriculum, these six groups were:

EET	1955-59	1960-64	1965-69
DDT	1955-59	1960-64	1965-69

Having used about 60 t-tests for each of the groups, we would expect up to three items to be significantly different for a confidence level of .05 ($\alpha = .05$). Only the 1965-69 DDT (with six items) and 1955-59 EET (with four items) groups fell outside these limits, and then only barely so. The conclusions drawn from conducting the t-tests is that the original respondents and the non-respondents were found to be the same in terms of responses to the questionnaire items. Having established this fact, we are now able to say that the characteristics found for the respondents are also applicable for the entire technician population of the study.

AGE OF ASSOCIATE DEGREE GRADUATES

The age of each graduate at the time they responded to the questionnaire was not ascertained. However, some recent data from the Dean of Student Affairs Office at The Pennsylvania State University relative to the 1970 entering male freshmen is helpful in this regard. The distribution of University Park baccalaureate freshmen and Commonwealth campus associate degree freshmen is shown in Table A below:

TABLE A

Distribution of 1970 Baccalaureate Male Freshmen (UP) and Associate Degree Freshmen by Age

Age	University Park Baccalaureate Freshmen (male) (% of total sample)	Commonwealth Campus Associate Degree Freshmen (male) (% of total sample)
17	7	4
18	87	75
19	4	10
20	0*	0
21	0*	2
22-above	1	9

*Less than one percent

The associate degree candidates are slightly older, on the average, than the baccalaureate candidates at the University Park campus. The age distribution, for the associate degree group, is skewed toward the older ages. Although the above distribution is only for the 1970 entering group, the age distribution of past entering classes is believed to be similar.

Examination of the above shows that the median age for entering Commonwealth campus associate degree candidates is 18 years, with 21 percent of them being 19 or older.

Using the median age of 18 for entering classes, we can then estimate the median age for each of the 15 graduation groups at the time this study was conducted. Therefore, the 1969 group is assumed to have a median age of 21 years in 1970 and the 1955 group would have a median age of 35 years in 1970.

NUMBER OF DEPENDENTS AND MARITAL STATUS

The distribution of the respondents in terms of marital status and number of dependents by curriculum and year of graduation is displayed in several tables and graphs. Table 1 is a frequency distribution of marital status and number of dependents by graduation year and curriculum. In Table 2, the average number of dependents by program and graduation year is shown. These tables are included in the Appendix of this report.

Some of this same data is graphically displayed in Figures 1 and 2 for ease in identification of trends. Figure 1A shows the percent of each EET graduation group as a function of years after graduation, while Figure 1B displays the same relationship for the DDT graduates. As would be expected, the percentage of graduates that are married approach a maximum for those groups that have been out in the world of work for seven or more years.

Using the assumptions made in the preceding section (i.e., that the median entrance age for associate degree graduates has been about 18 years since the programs have originated) we can use the present (1970) median age of each graduation group to examine the percentage of graduates married as a function of age. It was also felt it would be of interest to compare this group with national population by age grouping. The national figures in Table B are extracted from census data (3:32). It is seen that the percentage of associate degree graduates that are married after age 25 is five to eight percentage points higher than the national average for males. Figure 2 (A and B) are graphical displays of the mean number of dependents per married

TABLE B

Distribution of Married Males
by Selected Age Groups

Age Group	Married (National) %	Married (EET) %	Married (DDT) %	Married (EET+DDT) %
20-24	44.4	44.1	41.8	42.9
25-29	79.7	87.1	81.9	84.4
30-34	86.3	94.8	94.5	94.6

graduate. The x-axis indicates the number of years after graduation while the y-axis is measured in mean number of dependents. The mean for each graduation group was computed by dividing the total number of dependents by the total number of married graduates. This method fails to take into account those associate degree graduates that are single and may have declared a relative(s) as a dependent. The assumption made here is that this was not a common occurrence.

Examination of the Figure 2 graphs shows that the mean number of dependents varies directly with the number of years out of school. However, it appears that a clearly discernible plateau appears among those groups (in both curriculums) that have been graduated for ten to fifteen years. From this observation it is reasonable to conclude that the family size of the associate degree graduates tend to stabilize after they have been out of school for about ten years. Restating this in terms of age, the average associate degree technician has stabilized the size of his family (i.e., number of children) by the time he is about 31 years old. The stabilized family size was found to be 3.58 for the oldest six EET groups and 3.40 for the oldest six DDT classes.

INITIAL SALARIES

Tables 3 and 4 (see Appendix) list the starting salary (adjusted for cost of living changes) for each graduation class of the EET and DDT groups. These starting salaries are graphically displayed in Figure 3. Of interest are the trends that are made more apparent by the graphs. The lowest starting salaries (adjusted) were received by the earliest graduation classes. The graduation groups, with each succeeding year since 1955, had average starting salaries that were slightly greater than the class before it (with several exceptions). The trend toward increasingly larger beginning salaries reached a plateau for the last five graduation groups in both curriculums.

Of interest are some of the possible reasons for the leveling off of beginning salaries (when adjusted to cost of living changes) during the past five years.

1. Is there a reduced need for associate degree graduates of this type (i.e., electronics and drafting design technicians)? If this were the case, then a substantial portion of the graduates would be unemployed or employed in positions outside the field for which they were trained. Every respondent indicated being employed at the time he received his questionnaire, therefore, no severe employment problem of that nature was found. However, one of the limitations of the questionnaire was that it did not attempt to ascertain whether the graduate was working in the specialty for which he was prepared in his associate degree program. There have been several studies in other semi-professional occupations that have indicated a substantial drift away from the specialty area into a position that was either unrelated or only tangentially related to the field in which the individual was initially trained. It is hoped that this flaw in the design of the study will be remedied in the next questionnaire to be administered to this same group. It is reasonable to suspect that an occupational drift has occurred with a number of the graduates. One indication of this would be the

fact that over ten percent of the sample have gone on to earn baccalaureate and advanced degrees.* It is suspected that the great majority of these persons are no longer working as semi-professional technicians.

2. Another possible factor affecting the change in the need for associate degree technicians might be the substantial increase in the number of such persons graduated annually during the past five years. The great national growth in the number of electronics and drafting-design programs in the community colleges and area vocational schools may indeed have reduced (if not closed) the gap between technicians needed and technicians available.

3. A third factor may be at work toward further reducing the shortage of technicians of this type. There are indications that the greatest growth in semi-professional shortages is occurring in the "human services" related areas while the annual need for "hard technology" type technicians has stabilized.

In conclusion, it is conjectured that the leveling off of the earlier steady rise in beginning salaries indicates that the need for these kinds of technicians may have stabilized (i.e., the annual rate of supply is adequate to fulfill the demands resulting for new positions and replacements).

---

*Details on a year-by-year basis are provided in a later section.

DISTANCE BETWEEN HOMETOWN HIGH SCHOOL AND FIRST JOB

Table 5 (see Appendix) and Figure 4 deal with the average number of miles between the hometown high school and the first job. One of the most obvious observations that can be made is that the means for each graduation class for both curriculums are sufficiently high to indicate that many of the graduates had to make geographic moves of substantial distances for their first job. The DDT class of 1957 had the lowest mean among the thirty graduation groups, and that value (88 miles) is greater than what is considered to be typical. of commuters.

Examination of the graphical displays of Figure 4 shows that a considerable difference in the magnitude of this variable existed between many of the graduation classes. Some of the variation is accountable by the characteristic of the arithmetic mean--which can be heavily weighed by several large values in a relatively small group of graduates. For example, there were fewer than twenty respondents in the 1955 EET group and several members of that class moved to unusually great distances for their first jobs. The result is a disproportionately high mean for the entire group. This is also the case for the 1961 DDT group, where several of the 27 respondents had taken first jobs at unusually great distances, thereby resulting in the highest mean for that curriculum. This effect becomes less pronounced in the more recent graduation groups where the number of respondents were correspondingly larger and a few large values tend to be masked.

The means for the fifteen EET groups (Figure 4A) indicate a trend toward shorter distances between first job and hometown high school for the more recent graduation classes. It is interesting to conjecture

about this. In the middle and late fifties, the role of the electronics paraprofessional was still unclear. One of the earlier events to have a significant impact on the establishment of the concept of engineering technicians (which includes the electronics paraprofessional) was the establishment of the Institute for the Certification of Engineering Technicians in 1961. This was followed, in 1964, by the formation of the American Society of Certified Engineering Technicians. Up to this time, according to this conjecture, many industries did not know how such technicians could fit into their work force. Therefore, the earlier graduates of the Commonwealth campus electronics program probably had to go to more distant locations for their first jobs. In the sixties, the role of the electronics technician became clearer and won greater acceptance from industry at large. With this recognition of the electronics technician, there evolved a greater number of job possibilities closer to home. If this is true (and no attempt is made to prove this conjecture), then the average distance between hometown high school and first job would be smaller for the more recent EET graduation classes.

It is difficult to identify any trend in this variable for the fifteen DDT graduation groups (see Figure 4B). They display considerable variation in distance between hometown high school and first job between groups but not between the earlier and more recent classes. Eight of the DDT groups had means that were larger than the corresponding EET classes.

PRESENT SALARIES

The means and standard deviations of present salaries for the thirty graduation groups are listed in Table 6 (see Appendix). Figure 5A shows the means for the fifteen EET classes and the DDT group means are displayed in Figure 5B.

The graphical displays of Figure 5 enable us to identify several trends. Let us consider the EET groups first. As would be expected, the sharpest differences in present salaries are found among the most recent graduation classes. The inter-graduation group differences become smaller for the earliest five EET classes, which can be interpreted as a salary plateau. The average of the means for the five oldest groups (i.e., classes of 1955 through 1959 inclusive) is $1,020 per month (or $12,240 per year). It appears, based on this data, that most of the EET graduates from the earliest five classes sampled have present salaries that are quite similar. This would lead us to suspect that electronics technicians undergo substantial annual salary increments for the first ten years after graduation, after which increases in salary are substantially smaller.

There are important differences in the present salary trend for the fifteen DDT groups. First of all, the averages for fourteen of the classes are lower than those of the corresponding EET groups. Secondly, although the slope for the more recent graduates is similar to that for the recent EET groups, a reverse slope begins to occur for those groups that have been out ten or more years (classes of 1955 through 1960). There is a plateau for the tenth through thirteenth "years after graduation" groups, but the mean salaries for the two oldest classes are

decidedly lower (see Figure 5B). This investigator has no explanation to offer for the downturn in present salaries for the older DDT classes. The mean salary for the five oldest groups is $928 per month ($11,136 per year). This is about $1,100 per year less than the oldest EET graduates.

In summary, it appears that salary plateaus set in at about ten years after graduation for the technicians studied in this investigation. This compares favorably with many semi-professional and professional occupations (for example, public school teachers traditionally reach the maximum levels of their salary ranges in about the same length of time). Like other occupations in this level of the occupational hierarchy, continued increases in salary beyond that period of time would come to those who advance themselves to higher positions. (This is reflected in the data discussed in the section on "Interrelationships Among Some Variables.) Such advancements frequently are the result of demonstrated competence in performing at higher levels and/or academic persistence as evidenced by earning the baccalaureate degree. Therefore, it is reasonable to assume that a technician who remains a technician can expect increases in salary for about ten years, after which further salary increases are more likely to come about by moving from a para-professional job into a professional level position.

It is of interest to note that the average present salaries of these respondents are generally higher than the averages for associate degree graduates reported by Grinter, et. al. (4:87). With the exception of the most recent DDT graduates, the P.S.U. averages of present salary exceeds the national average from five to twenty percent

(with the greatest difference found for the oldest graduates). This is shown in Table C.

TABLE C

Comparison of Annual Salaries of Associate Degree Technicians: National and P.S.U.

Year of Graduation	National (4:87) Associate Degree Dollars	EET Dollars	DDT Dollars
1969	7,100	7,620	6,732
1967	7,650	7,968	7,608
1965	8,150	8,736	8,700
1963	8,650	10,908	10,188
1961	9,050	11,388	10,440
1959	9,450	11,736	11,352
1957	9,850	12,780	11,280

DISTANCE BETWEEN HOMETOWN HIGH SCHOOL AND PRESENT JOB

Table 7 (see Appendix) lists the mean distances between the hometown high school and the present job of the respondents by year of graduation and curriculum. These values are also displayed in Figure 6 (A and B).

Let us consider these values for the fifteen EET groups (see Figure 6A). The older graduates tend to presently live closer to their hometown high school than is the case for the more recent graduates (with the exception of the classes of 1969). As noted in an earlier section, the manner in which arithmetic means are computed allow extreme values to exert considerable effect on the overall mean. This is the case with the graduation classes of 1968 and 1963, where a few graduates with very large distances between their present job and hometown high school resulted in a disproportionately large mean for the entire group. Variations between graduation groups are quite large in some cases, and the trend for the more recent graduates to be located in jobs that are further away from their hometown schools than found with the older classes is not particularly strong. It might be more accurate to say that the trend is a mild one.

Figure 6B depicts the same relationship for the fifteen DDT classes. Although there are large variations between classes in some cases, the weak trend observed for the EET groups is decidedly more obvious here (i.e., the older graduation groups have jobs that are closer to their hometown high schools than that found for the more recent classes. This raises the question of whether the older graduates tend to select later jobs which are nearer to their "hometowns."

The present addresses of about 33 percent of all the graduates in the sample indicated having residences outside of Pennsylvania (see Table 8). The percent of graduates, by year of graduation with no curriculum distinction, is displayed in Figure 7. It appears that the graduation classes in the middle of the fifteen year span tend to have a higher percentage of out-of-state residences. No linear trend (i.e., from recent to earlier graduates or vice versa) is observed.

SIMULTANEOUS JOB-RESIDENCE CHANGES

The average number of simultaneous job-residence changes by curriculum and year of graduation are listed in Table 9 (see Appendix). In order to more easily identify trends, these values are graphically displayed in Figure 8.

The average values of this variable for the fifteen EET groups are shown in Figure 8A. There is a gradual increase in the number of simultaneous job-residence changes with the older graduation classes. This indicates that a significant (but not very large) number of graduates of earlier EET classes continue to make job-residence changes.

The same trend, but a much stronger one, is seen for the fifteen DDT groups. This indicates that a large number of DDT graduates in the earlier graduation classes continue to make job-residence changes than found for the corresponding EET groups.

SIMULTANEOUS JOB-COMPANY CHANGES

The average number of job-company changes for each graduation class by curriculum is shown in Table 10 (see Appendix). These values are graphically displayed in Figure 9 for the purpose of examining trends.

Let us first consider the fifteen EET groups, whose values for this variable are shown in the graph of Figure 9A. A general upward trend is found, where the older graduation groups have large average number of job-company changes. Figure 9B is a display of the same variable for the fifteen DDT graduation classes. The trend for this group is in the same direction but stronger, i.e., there is a greater amount of job-company changing going on with the older DDT graduates than with the EET graduates.

ADVANCED DEGREES

A tabulation of advanced degrees by curriculum and graduation year is found in Table 11 (see Appendix). It was found that 12.26 percent of the EET graduates and 10.30 percent of the DDT graduates have earned advanced degrees (i.e., baccalaureate, master's, and doctorates). Numerically, a total of 135 graduates (from a sample of 1,189) have advanced degrees.

The percent of each graduation class by curriculum that hold advanced degrees are displayed in Figure 10. Trends observed from these curves are not particularly strong.

The fifteen EET classes are shown in Figure 10A. There is a slight increase in the percentage of the class that has higher degrees from the most recent to the class of 1962, after which there is a plateau of several succeeding older groups, followed by a reduction for several of the oldest groups. If all external factors (for earning an advanced degree) were equal, it would be expected that an increased proportion of graduates of the progressively older graduation groups would have advanced degrees. The fact that this trend did not continue right on through the oldest groups leads one to suspect that several constraining factors may have been at work. In the mid-fifties and early sixties (the time when the graduates of the first five or six classes would be most likely to give serious thought about going on to another degree), there were no educational institutions in the Commonwealth (and very few in the country) that would accept the associate degree graduate as a junior in full standing. In those days, when there were no Bachelor of Technology type programs, an associate degree technician had to

"switch programs" if he wanted to go on to earn a bachelor's degree. A common change was to engineering, where the graduate found that none or very little of his previous college work was creditable to the bachelor's degree in engineering. The conjecture here is that this almost complete lack of transferability of academic credit to the bachelor's degree was the major constraint in aspiring for an advanced degree by the earlier graduation classes. It should be added, incidentally, that a number of the earlier graduates indicated this difficulty as being of considerable concern to them as an obstacle in their path toward occupational advancement.

During the mid-sixties, when the graduates from 1962 on were thinking about going on to an advanced degree, a number of institutions in the nation and even in the Commonwealth began to offer baccalaureate programs in which an associate degree technician could be admitted as a junior in full standing. Three institutions in the Commonwealth which offer programs of this type are Spring Garden College, Temple University, and Capitol Campus of The Pennsylvania State University. At the time of this writing, there are well over one hundred such programs available (nationally) to associate degree graduates in selected occupational areas. This move toward offering baccalaureate programs for technicians continues to grow, and it is safe to predict that a greater proportion of associate degree technicians in the future will go on to a four-year degree (either immediately or in later years).

Turning to the DDT graduates, the same overall trend described for the EET groups is found, although the percentage of the classes going

on to advanced degrees is slightly lower. It is conjectured that the downward trend for the older groups is the result of those constraining factors described for the EET classes.

MILITARY EXPERIENCE

The amount and kind of military experiences (i.e., domestic and foreign) are listed by year of graduation and curriculum in Table 12 (see Appendix). Graphical displays of several aspects of this variable are found in Figures 11 through 14.

Figure 11 is concerned with the percent of graduates, by graduation year and curriculum, that are veterans of military service. It is seen that a clear trend exists--a higher percentage of the older graduation groups are veterans of the armed services. Of interest is that the average of the annual means for both curriculums is over fifty percent.

The average length of service (in months) is shown in Figure 12, where the mean is about 32 months for the EET groups and 27 months for the fifteen DDT classes. A further breakdown of military service is given in Figures 13 and 14. Those with military experience in the classes from both curriculums averaged 12 months of domestic service. The veterans from the fifteen EET groups had an average of 18 months of overseas duty and 14 months was the mean overseas tour of duty for the DDT veterans.

INTERRELATIONSHIPS AMONG SOME VARIABLES

Tables 13 and 14 (see Appendix) display the zero-order correlations for the eight variables related to mobility (i.e., year of graduation, number of dependents, first salary, miles between first job and hometown high school, present salary, miles between present job and hometown high school, number of job-residence changes, and the number of job-company changes). These correlations indicate the strength of relationships between the variables selected for examination. It should be pointed out, since they are zero-order correlations, the relationships reported here are those that occur when the possible effects of other variables upon those being considered are not partialed out.

Graduation Year: This variable is related* to number of dependents, present salary, job-residence changes, and job-company changes for graduates of both curriculums. The relationship is that these variables are correspondingly larger for graduates from the older graduation classes. In addition to these, there is a significant correlation between first salary and graduation year for the DDT groups: first salaries are higher for the more recent graduates than was the case for the earlier classes.

First Salary: A strong positive relationship* exists between the amount of first salary and the number of miles between the first job and hometown high school for the EET graduates. This was not significant for the DDT group.

Present Salary: Significant relationships* were found between

---

*Significant at the .05 level.

present salary and graduation year, number of dependents, and first salary for both the DDT and EET graduates. For the EET groups, first salary and first miles were also related, as indicated in the preceding paragraph.

Present Miles: The variable "present miles" was positively related* to first salary, first miles, and present salary for the EET graduates only.

Job-residence Changes: There were significant direct relationships* of this variable with graduation year, number of dependents, and present salary, for both the DDT and EET groups. Also, it was related to first miles and first salary for the EET graduates only.

Job-company Changes: This variable was significantly related* to graduation year, number of dependents, present salary and job-residence changes for both groups. In addition, it was positively related to first salaries and first miles for the EET graduates only.

Product moment coefficient of correlations was computed for the following: (a) military time served vs first salary, (b) military time served vs present salary, (c) first salary vs present salary. In all cases, the coefficient values was near zero and considered not significant.

Table 15 displays the values of several of the variables by curriculum. From this Table, we see that the present salary of graduates holding the bachelor degree is $200 per month greater than the associate degree group for the EET graduates while the difference

---

*Significant at the .05 level.

between these two groups for the DDT graduates is just over $150 per month. Therefore, the greatest salary benefit for earning an advanced degree is enjoyed by the EET graduates (but also considerable for the DDT groups). Other variables can be compared by curriculum and highest degree earned by examination of Table 15.

REFERENCES

1. Cochran, William G. Sampling Techniques: 2nd Edition, New York: John Wiley and Sons, Inc., 1963.

2. Klugh, Henry E. Statistics: The Essentials for Research, New York: John Wiley and Sons, Inc., 1970.

3. U.S. Bureau of the Census, Statistical Abstract of the United States: 1970, (91st Edition). Washington, D.C., U.S. Printing Office, 1970.

4. Grinter, Linton E., et. al. Engineering Technology Education Study: Preliminary Report. Washington, D.C.: American Society for Engineering Education, October, 1970.

APPENDICES

I. Tables

II. Figures

III. Cover Letter and Questionnaire

IV. Means and Standard Deviations for Selected Variables: EET

V. Means and Standard Deviations for Selected Variables: DDT

MARITAL STATUS AND DEPENDENTS

Table 1

Graduation Year	Program	N	Single	Married	Divorced	Separated	Dependents	% Married
1955	EET	16	--	16			58	100
	DDT	12	2	10	2		44	83
1956	EET	15	1	14	1		58	93
	DDT	19	0	19			63	100
1957	EET	22	--	22			77	100
	DDT	35	--	35			127	100
1958	EET	33	1	32			113	97
	DDT	47	3	46			147	98
1959	EET	30	4	26			91	87
	DDT	51	6	45			139	88
1960	EET	38	4	34	1		117	89
	DDT	34	5	29			101	85
1961	EET	24	--	24			69	100
	DDT	28	4	24			65	86
1962	EET	37	4	33			91	89
	DDT	34	5	29			76	85
1963	EET	38	7	31			69	82
	DDT	53	11	42	1		109	79
1964	EET	33	7	26	1	1	55	79
	DDT	39	9	30			63	77
1965	EET	42	20	22	2		43	52
	DDT	54	11	43			83	80
1966	EET	44	12	32			55	73
	DDT	43	23	20			38	47
1967	EET	46	22	24			45	52
	DDT	45	21	24			47	53
1968	EET	55	39	16			29	29
	DDT	63	51	12			32	19
1969	EET	69	50	19			33	28
	DDT	68	53	15			18	22

NUMBER OF DEPENDENTS (Means and Standard Deviations by Curriculum and Year of Graduation)

Table 2

Grad. Year	EET		DDT	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1955	3.63	1.41	3.58	1.56
1956	3.47	1.30	3.32	.95
1957	3.67	1.11	3.76	1.71
1958	3.65	1.31	3.34	1.14
1959	3.37	1.62	3.04	1.52
1960	3.26	.83	3.50	1.00
1961	2.91	1.04	2.75	.99
1962	2.84	1.05	2.54	1.27
1963	2.38	1.17	2.42	.93
1964	2.32	1.09	2.17	.85
1965	1.88	1.01	2.12	1.13
1966	1.89	.87	1.88	.95
1967	1.71	.69	1.85	1.08
1968	1.50	.69	1.61	.66
1969	1.57	.73	1.22	.43
Avg.	2.67		2.61	

Starting Salary adjusted for changes in the cost of living (1957-59 = 100)

Table 3
EET

	Consumer price index*	Monthly starting salary	SD	Adjusted real wage	% Change over 1955
1955	93.3	318	46.6	341	---
1956	94.7	359	57.4	379	111
1957	98.0	389	65.7	397	116
1958	100.7	381	149	378	111
1959	101.5	411	67	405	119
1960	103.1	402	73.2	390	114
1961	104.2	396	76.5	380	111
1962	105.4	416	90.9	395	116
1963	106.7	427	77.1	400	117
1964	108.1	428	87.7	396	116
1965	109.9	472	55.2	429	126
1966	113.1	618	547	546	160
1967	116.6	537	64.7	462	135
1968	121.2	545	99.5	450	132
1969	127.7	575	83.9	450	132
Avg.	--	--	--	413	--

*Taken from The Economic Report of the President Jan. 1970. Page 229
Table C-45 (Source, Bureau of Labor Statistics).

Starting Salary adjusted for changes in the cost of living (1957-59 = 100)

Table 4

DDT

	Consumer price index*	Monthly starinng salary	SD	Adjusted real wage	% Change of 1955 starting salaries
1955	93.3	335	40.5	359	---
1956	94.7	359	37.3	379	106
1957	98.0	377	82.6	385	107
1958	100.7	329	74.4	327	92
1959	101.5	365	815	360	100
1960	103.1	382	47.1	371	103
1961	104.2	399	67.7	383	107
1962	105.4	409	79	388	108
1963	106.7	416	55.9	390	109
1964	108.1	401	72.9	371	103
1965	109.9	448	92.7	408	114
1966	113.1	486	64	430	120
1967	116.3	509	90.6	438	122
1968	121.2	511	82.7	422	118
1969	127.7	547	95.9	428	119
Avg.	--	--	--	389	--

*Taken from the Economic Report of the President, Jan. 1970. Page 229, Table C-45 (Source, Bureau of Labor Statistics).

FIRST MILES (Means and Standard Deviations
By Curriculum and Year of Graduation)

Table 5

Grad. Year	EET			DDT		
	$\overline{X}$	miles	S.D.	$\overline{X}$	miles	S.D.
1955	641		999	169		171
1956	367		797	259		690
1957	303		676	87.5		140
1958	143		144	258		549
1959	260		543	365		815
1960	176		205	275		536
1961	292		628	618		956
1962	396		778	372		761
1963	335		542	300		525
1964	120		101	41.3		53.7
1965	128		120	97		146
1966	286		584	367		640
1967	145		177	211		339
1968	184		343	388		1394
1969	146		177	198		480
Avg.	286			281		

PRESENT SALARY (Means and Standard Deviations
By Curriculum and Year of Graduation)

Table 6

Grad. Year	EET		DDT	
	Dollars		Dollars	
	$\overline{X}$	S.D.	$\overline{X}$	S.D.
1955	1075	353	894	216
1956	995	234	914	142
1957	1065	314	940	191
1958	988	257	950	167
1959	978	258	946	224
1960	944	144	943	262
1961	949	138	870	197
1962	882	138	780	134
1963	909	121	849	148
1964	748	153	745	223
1965	728	195	725	190
1966	886	806	638	169
1967	664	150	634	139
1968	549	220	554	189
1969	605	104	561	131
Avg.	864		796	

PRESENT MILES (Means and Standard Deviations
By Curriculum and Year of Graduation)

Table 7

Grad. Year	EET Miles		DDT Miles	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1955	325	776	142	178
1956	340	799	107	282
1957	76	94	108	179
1958	266	486	153	226
1959	152	167	376	767
1960	268	537	341	711
1961	405	759	373	1357
1962	359	789	304	669
1963	1117	2564	268	594
1964	2 26	529	144	516
1965	308	772	616	2300
1966	456	1043	581	1701
1967	585	1727	380	1078
1968	1125	2733	719	2255
1969	206	441	248	624
Avg.	414		324	

PRESENT ADDRESS OF GRADUATES

Table 8

Year Graduated	Pennsylvania		Other	
	number	percent	number	percent
1955	18	62.1	11	37.9
1956	25	75.8	8	24.2
1957	40	74.1	14	25.9
1958	41	56.2	32	43.8
1959	44	62.0	27	38.0
1960	41	57.7	30	42.3
1961	22	48.9	23	51.1
1962	38	59.4	26	40.6
1963	37	48.7	39	51.3
1964	41	65.1	22	34.9
1965	72	78.3	20	2.17
1966	65	72.2	25	27.8
1967	59	65.5	31	34.4
1968	88	77.2	26	22.8
1969	102	76.1	32	23.9
TOTAL	733	66.7	366	33.3

SIMULTANEOUS JOB--RESIDENCE CHANGES
(Means and Standard Deviations
By Curriculum and Year of Graduation)

Table 9

Grad. Year	EET		DDT	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1955	1.58	.79	2.67	.82
1956	2.11	1.37	2.56	2.46
1957	1.57	1.02	2.00	.73
1958	2.13	1.31	2.85	2.30
1959	2.06	.80	2.18	1.60
1960	1.79	1.02	1.70	.86
1961	1.90	1.10	2.47	.96
1962	1.80	.83	1.77	.93
1963	1.33	.62	1.80	.85
1964	1.40	.51	2.13	2.13
1965	1.35	.59	1.93	1.33
1966	1.75	.97	1.14	.36
1967	1.33	.49	1.43	.65
1968	1.18	.39	1.30	.95
1969	1.29	.47	1.27	.64

SIMULTANEOUS JOB--COMPANY CHANGES
(Means and Standard Deviations
By Curriculum and Year of Graduation)

Table 10

Grad. Year	EET		DDT	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1955	2.29	.91	3.33	2.27
1956	2.83	1.85	3.33	2.35
1957	2.47	1.30	2.67	1.54
1958	2.58	1.41	2.87	1.75
1959	2.46	1.30	3.26	2.14
1960	2.50	1.38	2.94	.92
1961	2.17	.99	2.93	1.41
1962	1.96	1.02	2.16	1.25
1963	1.73	.86	2.36	1.10
1964	1.88	.97	2.45	1.74
1965	1.72	.70	2.30	1.27
1966	1.87	.85	1.42	.63
1967	1.30	.52	1.31	.53
1968	1.93	.83	1.32	.64
1969	1.93	.65	1.91	.75

ADVANCED DEGREES--BY CURRICULUM AND GRADUATION YEAR

Table 11

Year	Program	Total Respondents	B.S.	% of Total	Master's	% of Total	Doctorate	% of Total	% of Total
1955	EET	14	3	21.41	0	0	0	0	21.41
	DDT	17	0	0	0	0	0	0	0
1956	EET	19	0	0	1	5.26	0		5.26
	DDT	16	0	0	1	6.25	0	0	6.25
1957	EET	35	5	14.28	1	2.85	0		17.14
	DDT	22	3	13.63	1	4.54	0		18.18
1958	EET	49	8	16.32	2	4.08	0		20.40
	DDT	34	4	11.76	2	5.88			17.64
1959	EET	49	5	10.20	0	0	0	0	10.20
	DDT	30	4	13.33	2	6.66	1	3.33	23.33
1960	EET	34	7	20.58	1	2.94	0		23.52
	DDT	41	2	4.87	0	0	0	0	4.87
1961	EET	28	4	14.28	1	3.57	0		17.85
	DDT	23	5	21.73	0	0	0	0	21.73
1962	EET	31	6	19.35	2	6.45	0	0	25.80
	DDT	36	5	13.88	1	2.77	0	0	16.66
1963	EET	54	3	5.55	2	3.70	0		9.25
	DDT	32	3	9.37	0	0	0	0	9.37
1964	EET	37	4	10.81	1	2.70	0		13.51
	DDT	34	5	14.70	0	0	0	0	14.70
1965	EET	55	4	7.27	0	0	0	0	7.27
	DDT	41	4	9.75	0	0	0	0	9.75
1966	EET	48	6	12.50	0	0	0	0	12.50
	DDT	50	6	12.00	0	0	0	0	12.00
1967	EET	47	7	14.89	0	0	0	0	14.89
	DDT	47	3	6.38	0	0	0	0	6.38
1968	EET	64	5	7.81	0	0	0	0	7.81
	DDT	60	5	8.33	0	0	0	0	8.33
1969	EET	72	0	0	0	0	0	0	0
	DDT	70	0	0	0		0	0	0
Totals	EET	636	67		11		0	78	12.26
	DDT	553	49		7		1	57	10.30
Totals		1,189		116	18		1	135	

MILITARY EXPERIENCE

Table 12

Graduation Year	Program	N	% Veteran	Overseas Avg. (Mos.)	Domestic Avg. (Mos.)	Total Length of Service Avg. (Mos)
1955	EET	16	63	15	11	26
	DDT	14	71	14	20	34
1956	EET	16	75	17	19	36
	DDT	19	79	15	18	33
1957	EET	24	67	28	11	39
	DDT	35	86	19	16	35
1958	EET	33	79	19	17	36
	DDT	49	63	20	11	31
1959	EET	29	86	29	10	39
	DDT	51	63	13	17	30
1960	EET	40	58	19	14	33
	DDT	34	71	18	10	28
1961	EET	24	54	25	16	41
	DDT	28	50	12	14	26
1962	EET	37	35	25	13	38
	DDT	34	44	12	12	24
1963	EET	38	50	10	15	25
	DDT	54	39	15	11	26
1964	EET	35	66	36	12	48
	DDT	39	41	17	12	29
1965	EET	44	64	18	11	29
	DDT	54	52	13	14	27
1966	EET	44	64	15	16	31
	DDT	43	33	15	13	28
1967	EET	46	30	9	14	23
	DDT	45	42	12	10	22
1968	EET	52	56	10	7	17
	DDT	63	25	13	1	14
1969	EET	69	29	17	10	27
	DDT	68	21	7	6	13

ZERO-ORDER CORRELATIONS FOR MOBILITY VARIABLES
EET GRADUATES

Table 13

Variables	Graduation Year 1	Dependents 2	F Salary 3	F Miles 4	P Salary 5	P Miles 6	Job-Residence Changes 7	Job-Company Changes 8
1	1.00	-0.67*	0.09	-0.12	-0.36*	0.05	-0.30*	-0.36*
2		1.00	0.09	0.16	0.44*	-0.01	0.28*	0.35*
3			1.00	0.56*	0.71*	0.29*	0.28*	0.21*
4				1.00	0.52*	0.32*	0.40*	0.27*
5					1.00	0.23*	0.35*	0.34*
6						1.00	0.14	0.06
7							1.00	0.62*

*Significant at the .05 level

ZERO-ORDER CORRELATIONS FOR MOBILITY VARIABLES
DDT GRADUATES

Table 14

Variables	Graduation Year 1	Dependents 2	F Salary 3	F Miles 4	P Salary 5	P Miles 6	Job-Residence Changes 7	Job-Company Changes 8
1	1.00	-0.54*	0.22*	-0.02	-0.45*	0.05	-0.28*	-0.38*
2		1.00	-0.07	0.06	0.45*	-0.08	0.22*	0.31*
3			1.00	0.14	0.21*	0.04	-0.02	-0.02
4				1.00	0.02	0.19	0.16	0.06
5					1.00	-0.03	0.26*	0.32*
6						1.00	0.04	-0.04
7							1.00	0.67*

*Significant at the .05 level.

SEVERAL DEMOGKAPHIC VARIABLES BY CURRICULUM
AND HIGHEST DEGREE EARNED

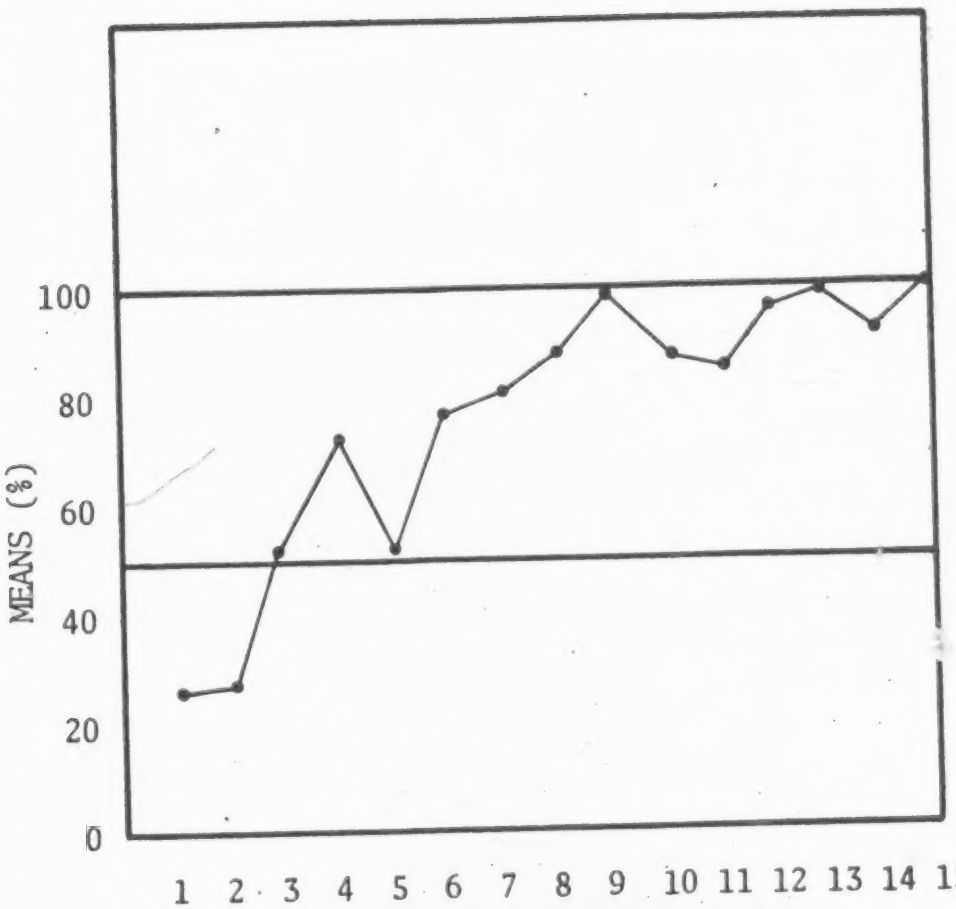
Table 15

Variable	Quantity		N	
	EET	DDT	EFT	DDT
Associate Degree				
Military Time (mos.)	33	30	241	250
First Salary ($)	460	432	430	527
First Miles	207	268	435	535
Present Salary ($)	788	762	402	494
Present Miles	428	361	416	511
Bachelor's Degree				
Military Time (mos.)	38	41	16	13
First Salary ($)	440	429	49	36
First Miles	285	191	50	35
Present Salary ($)	1,010	916	48	36
Present Miles	305	280	52	35
Master's Degree				
Military Time (mos.)	58	52	4	2
First Salary ($)	382	296	5	6
First Miles	710	105	5	6
Present Salary ($)	993	1,129	8	7
Present Miles	344	149	8	7

SAMPLING RESULTS

Table 16

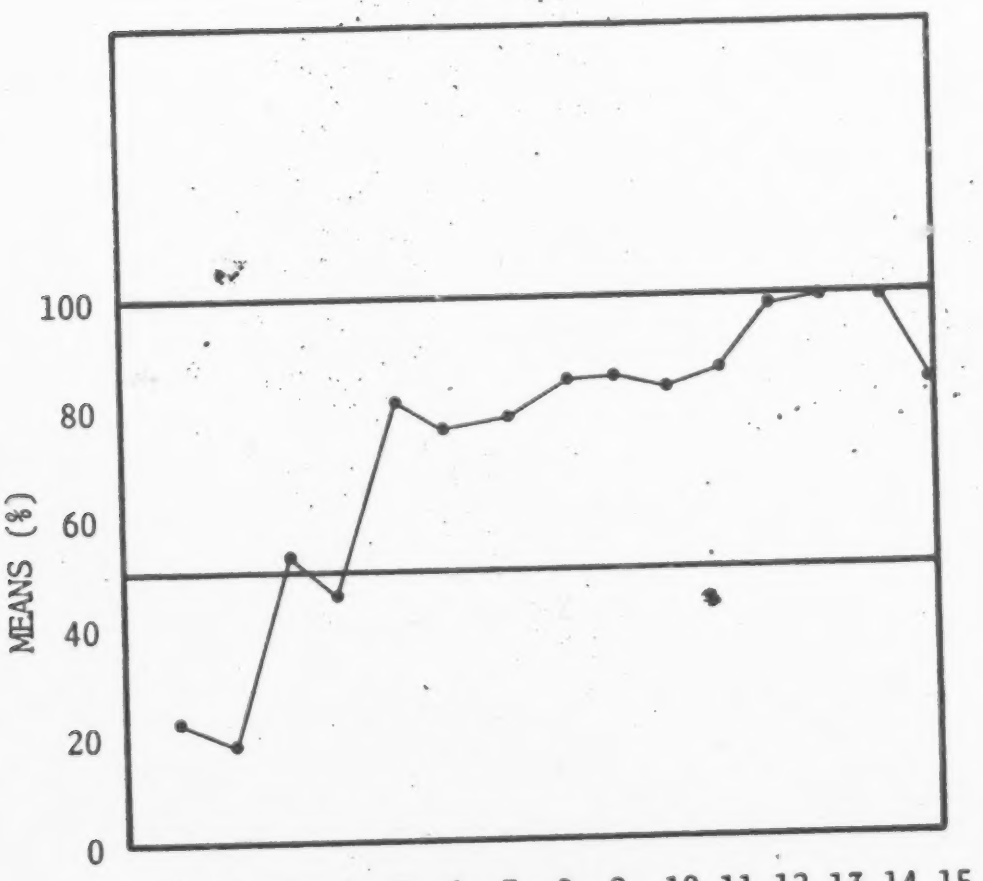
		Original Sample Number	Number of bad Addresses	Original Respondents Number	Original Respondents % of Orig. Sample	Follow-Up Sample Number	Follow-Up Respondents Number	Follow-Up Respondents % of Follow-Up Sample	Total Respondents
1955	DDT	28	7	14	50	--	--	---	14
	EET	40	9	15	38	2	2	100	17
1956	DDT	39	7	18	46	1	1	100	19
	EET	29	4	15	52	1	1	100	16
1957	DDT	65	12	33	51	2	2	100	35
	EET	46	6	21	46	1	1	100	22
1958	DDT	86	8	45	52	4	4	100	49
	EET	52	9	28	54	6	6	100	34
1959	DDT	79	10	44	56	5	5	100	49
	EET	62	8	28	45	2	2	100	30
1960	DDT	69	16	32	46	3	2	67	34
	EET	76	12	39	51	2	2	100	41
1961	DDT	57	10	25	44	3	3	100	28
	EET	49	7	21	43	2	2	100	23
1962	DDT	62	8	30	48	2	1	50	31
	EET	64	11	34	53	2	2	100	36
1963	DDT	95	10	48	51	7	6	86	54
	EET	79	12	28	35	6	4	67	32
1964	DDT	76	7	35	46	3	2	67	37
	EET	63	8	30	48	5	4	80	34
1965	DDT	94	7	53	56	2	2	100	55
	EET	78	11	40	51	1	1	100	41
1966	DDT	86	7	44	51	5	4	80	48
	EET	78	8	46	59	4	4	100	50
1967	DDT	75	7	44	58	4	3	75	47
	EET	87	3	46	52	1	1	100	47
1968	DDT	95	1	60	63	6	4	67	64
		101	5	54	54	7	6	86	60
1969	DDT	94	1	68	72	4	4	100	72
	EET	94	-	67	71	4	3	75	70
Total									
	DDT	1,100	118	593	54	51	43	84	636
	EET	998	113	512	51	46	41	89	553
Totals		2,098	231	1,105	53	97	84	87	1,189



PER CENT OF GRADUATES THAT ARE MARRIED (EET)

$\bar{X}_{15 \text{ years}} = 68.5\%$

FIGURE - 1-A



PER CENT OF GRADUATES THAT ARE MARRIED (DDT)

$\bar{X}_{15 \text{ years}} = 67.7\%$

FIGURE - 1-B

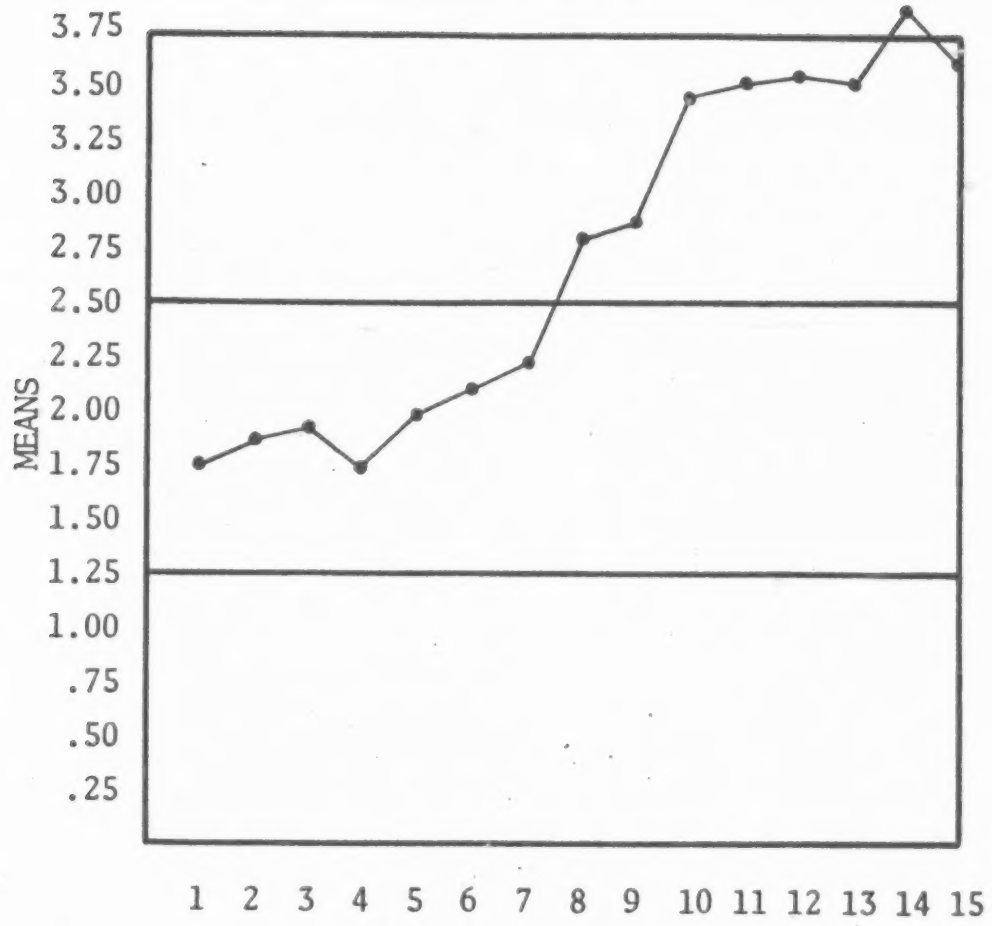


FIGURE - 2-A

NUMBER OF DEPENDENTS
(EET)

$\bar{X}_{15 \text{ years}} = 2.70$

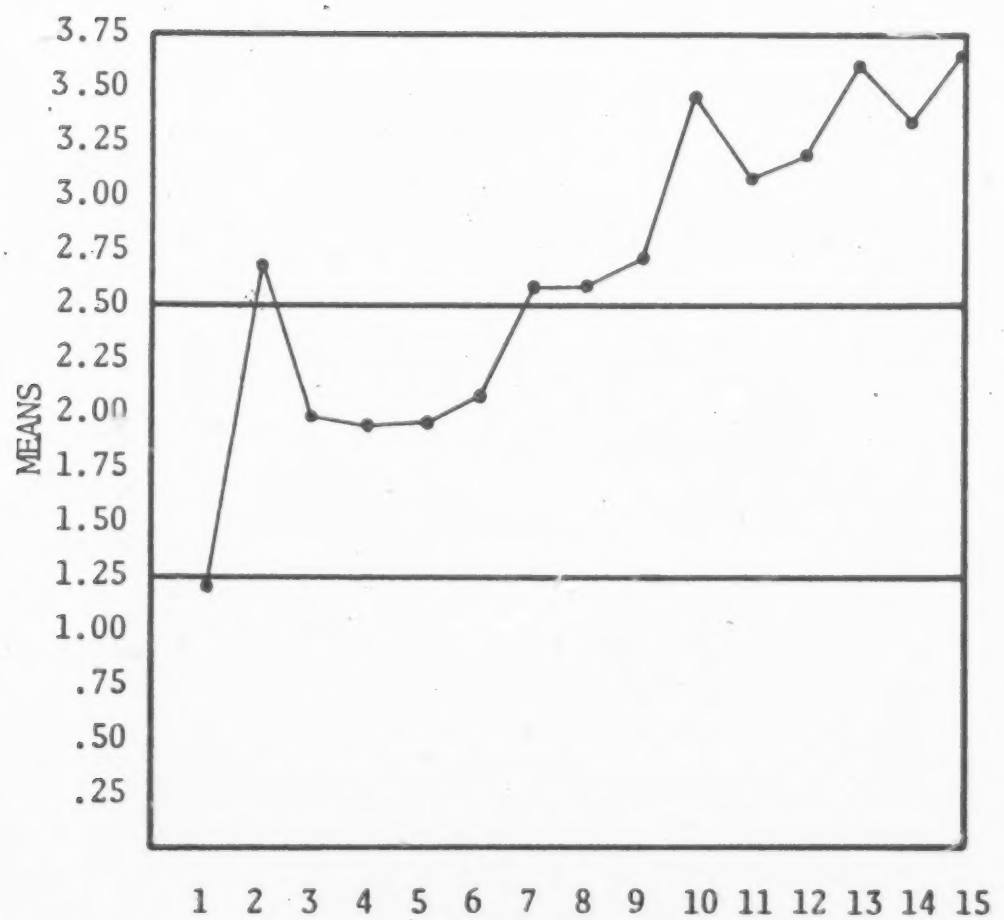
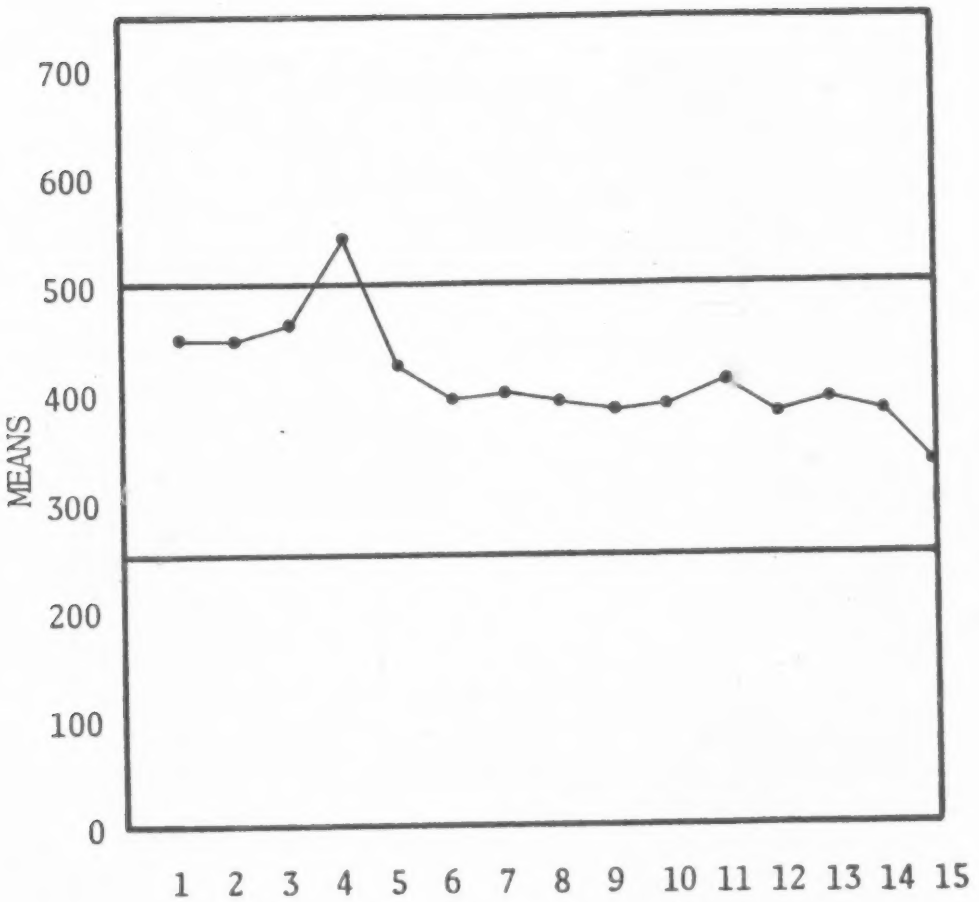


FIGURE - 2-B

NUMBER OF DEPENDENTS
(DDT)

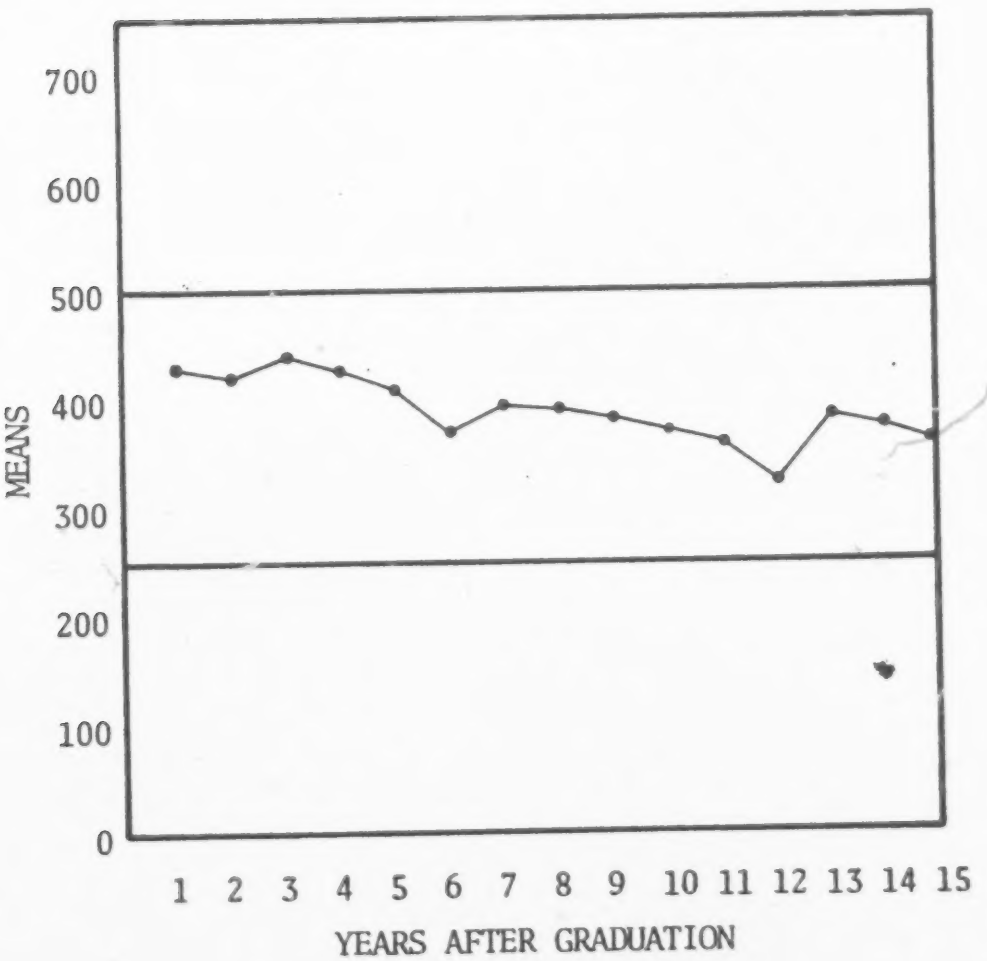
$\bar{X}_{15 \text{ years}} = 2.71$



STARTING SALARIES
(ADJUSTED)
(EET)

$\bar{X}_{15 \text{ years}} = \$413$

FIGURE - 3-A



STARTING SALARIES
(ADJUSTED)
(DDT)

$\bar{X}_{15 \text{ years}} = \$389$

FIGURE - 3-B

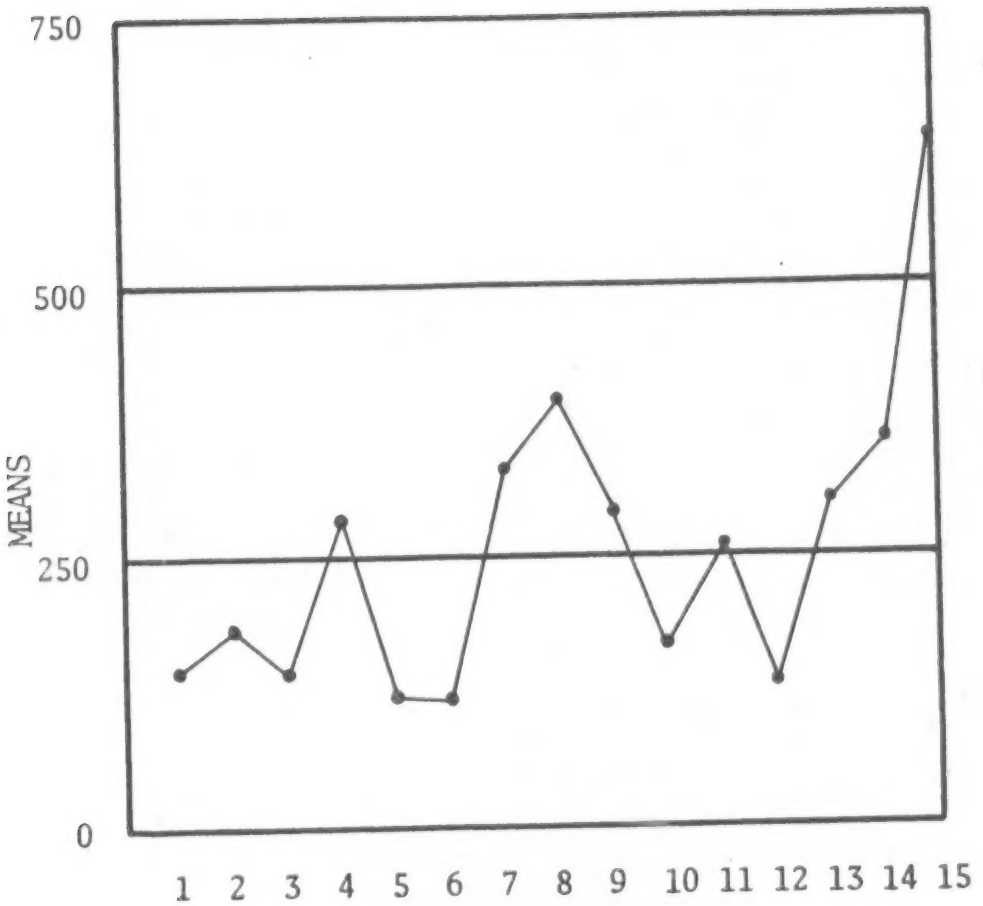


FIGURE - 4-A

MILES BETWEEN 1st JOB AND HOMETOWN H.S. (EET)

$\bar{X}_{15 \text{ years}}$ = 286 MILES

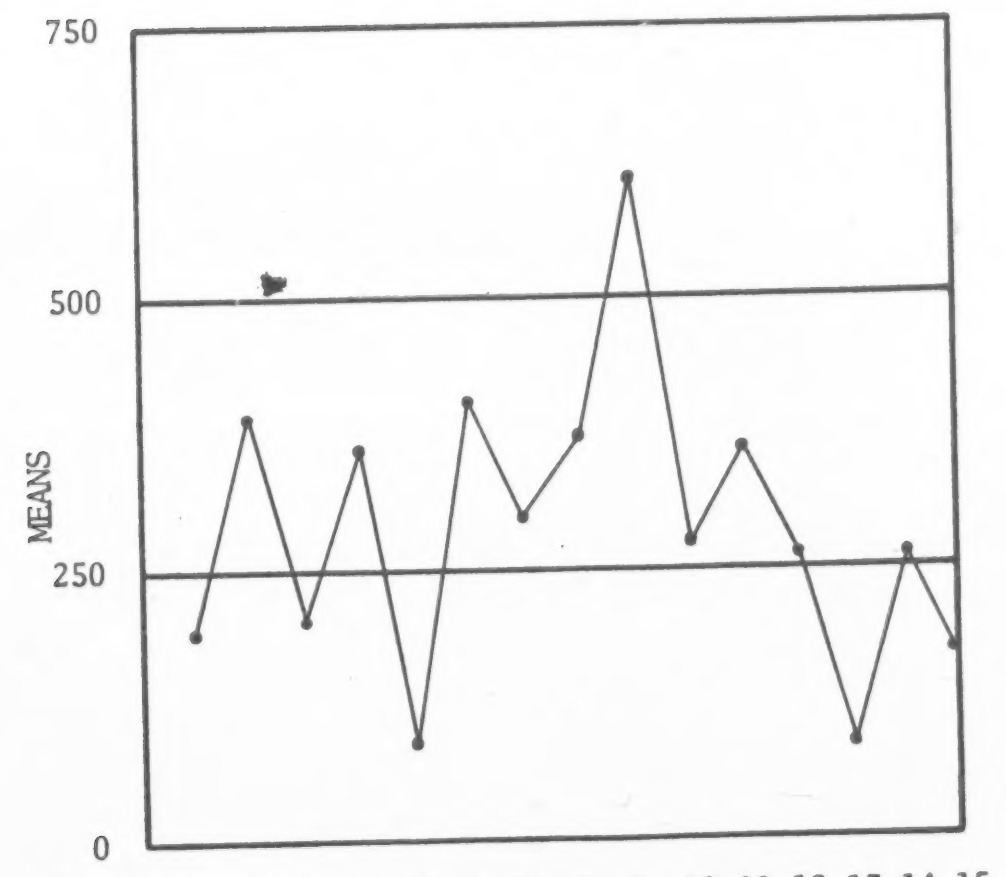


FIGURE - 4-B

MILES BETWEEN 1st JOB AND HOMETOWN H.S. (DDT)

$\bar{X}_{15 \text{ years}}$ = 281 MILES

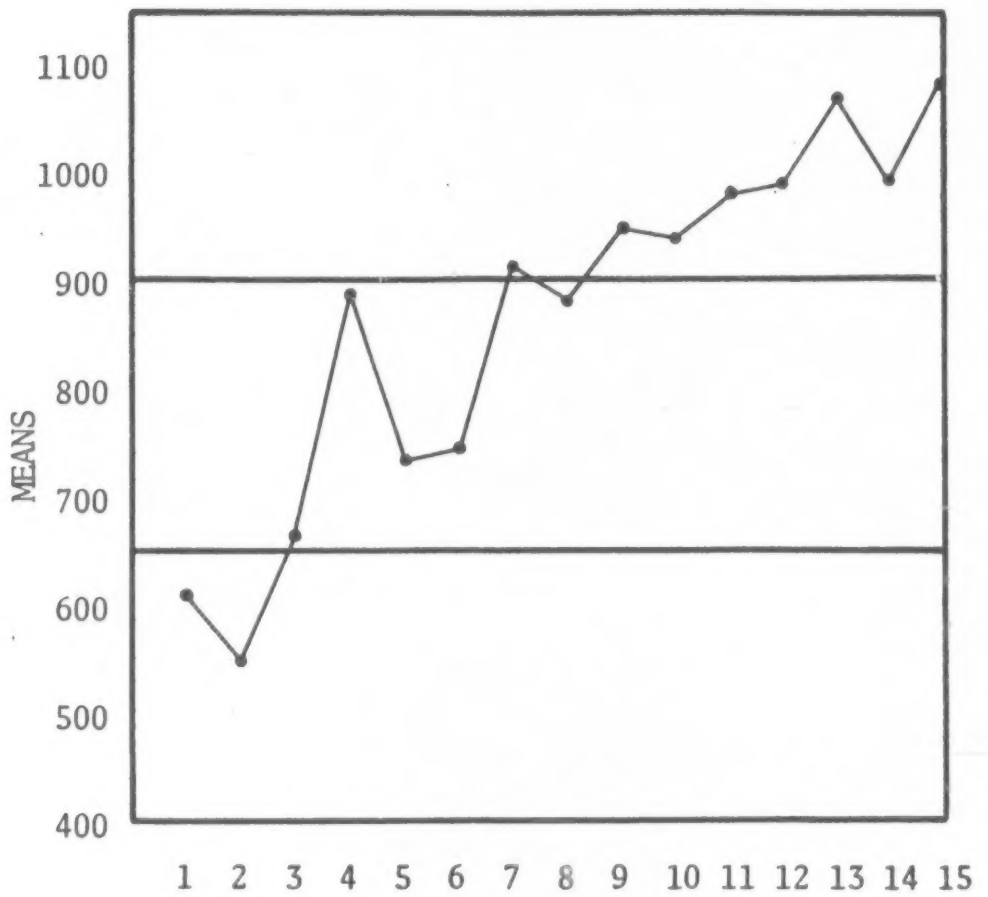


FIGURE - 5-A

PRESENT SALARIES
(EET)

$\bar{X}_{15\ yeras} = \$864$

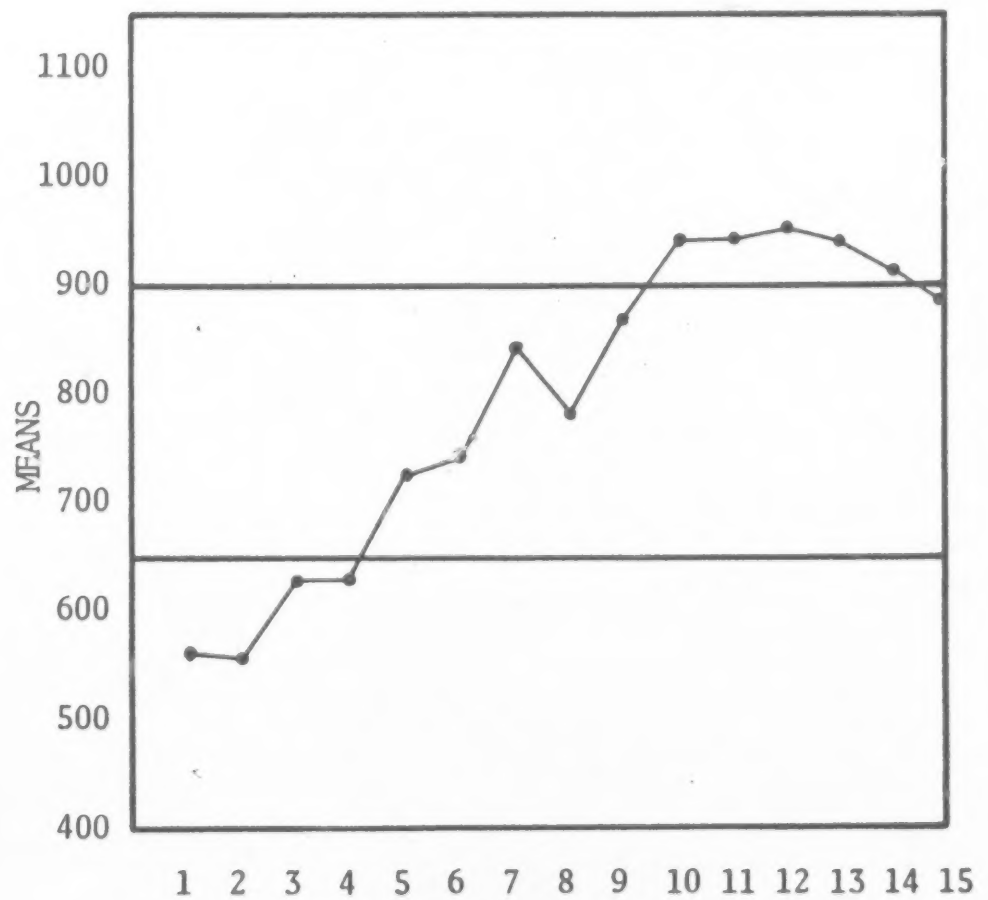


FIGURE - 5-B

PRESENT SALARIES
(DDT)

$\bar{X}_{15\ years} = \$796$

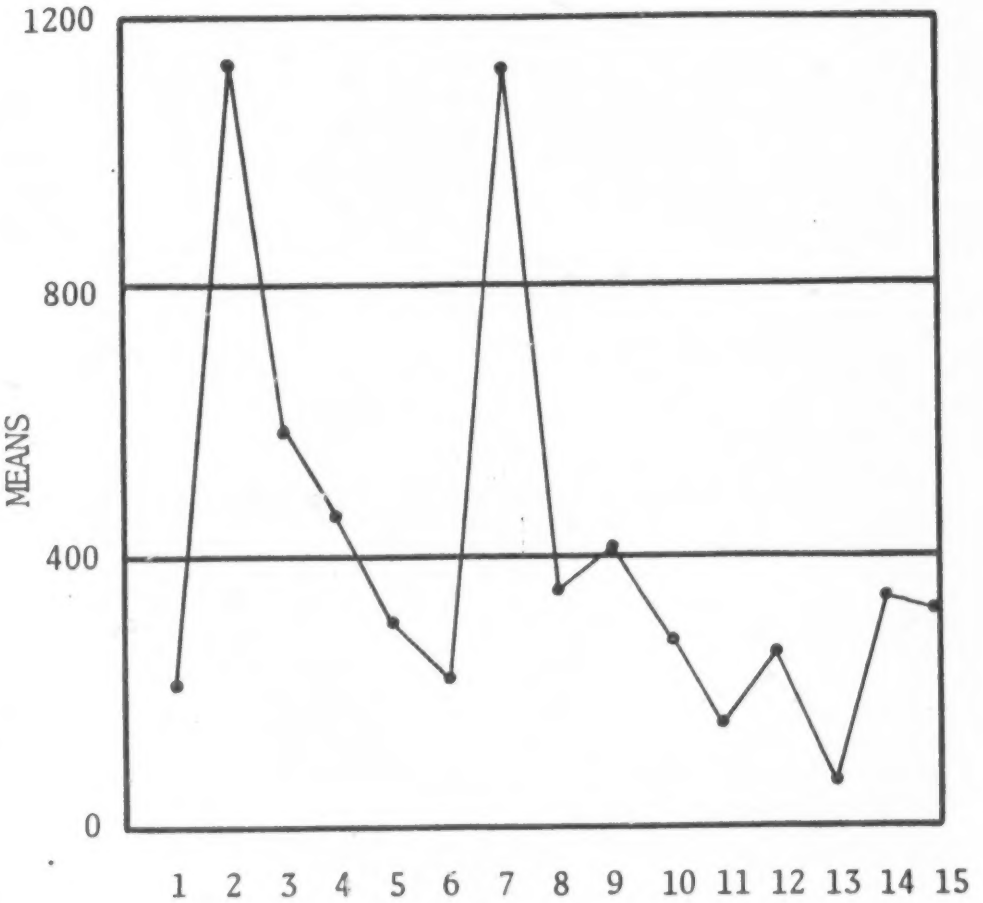


FIGURE - 6-A

MILES BETWEEN
PRESENT JOB AND
HOMETOWN H.S.
(EET)

$\bar{X}_{15\ years}$ = 414 MILES

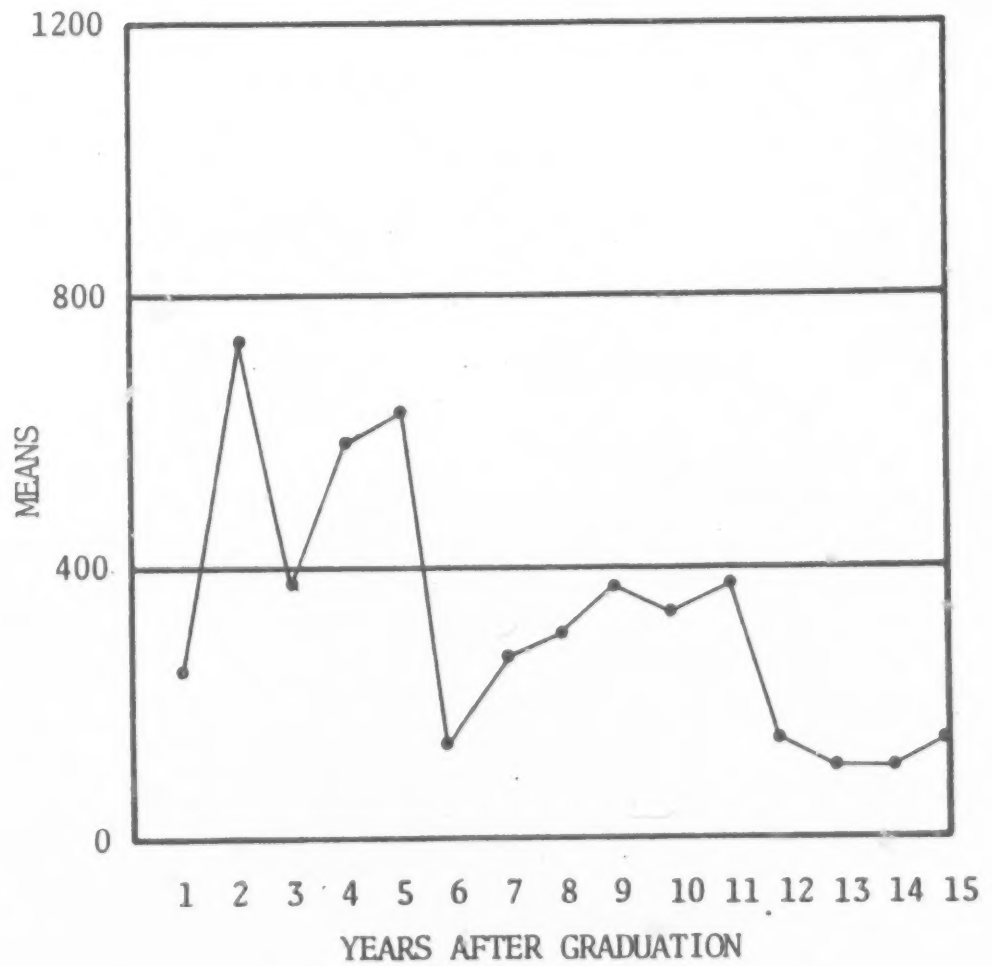


FIGURE - 6-B

MILES BETWEEN
PRESENT JOB AND
HOMETOWN H.S.
(DDT)

$\bar{X}_{15\ years}$ = 324 MILES

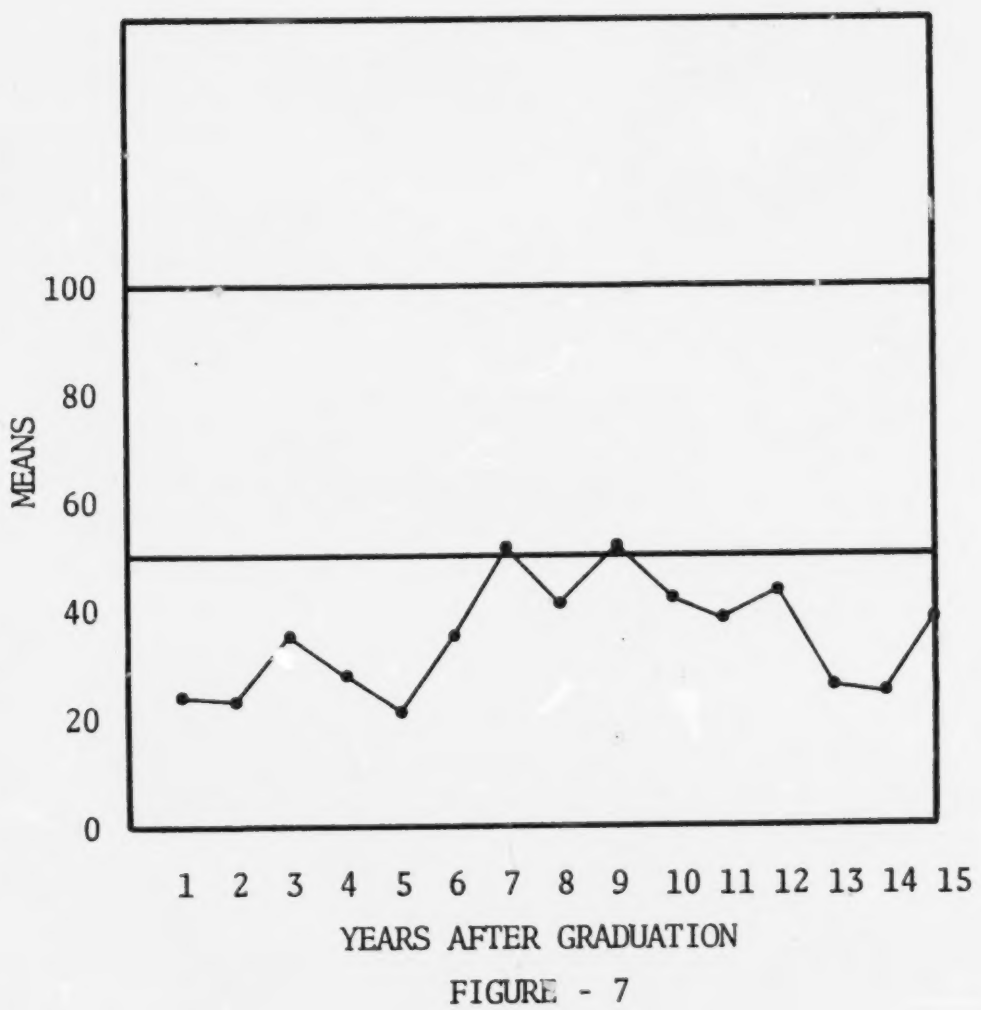
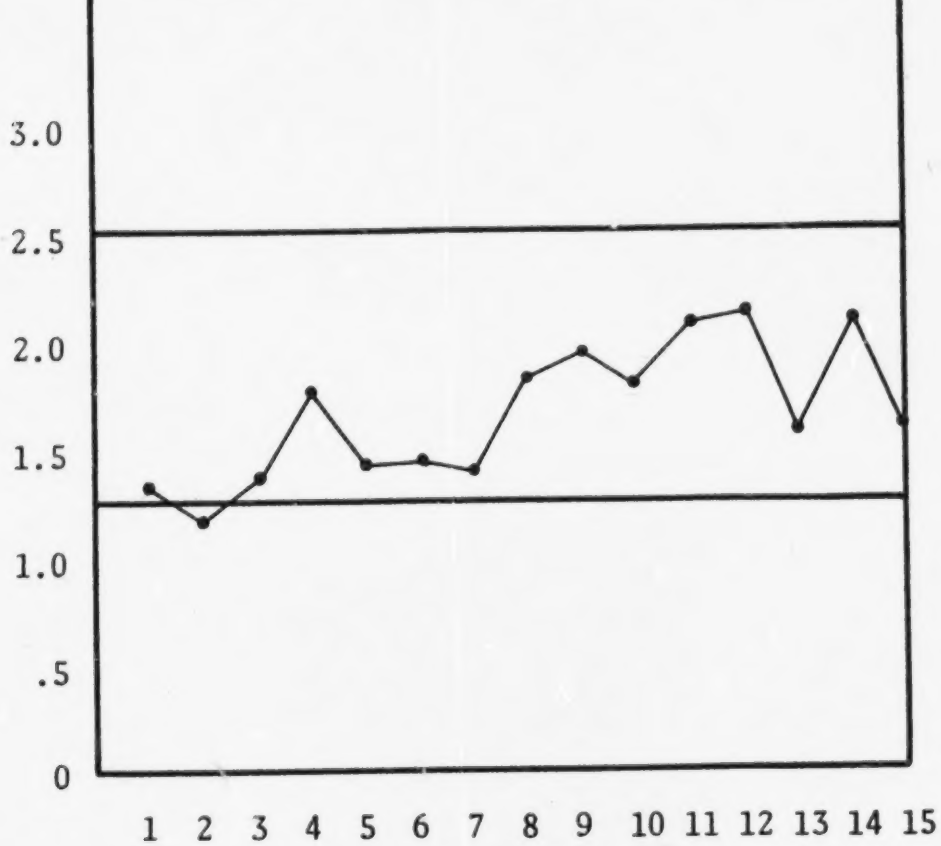


FIGURE - 7

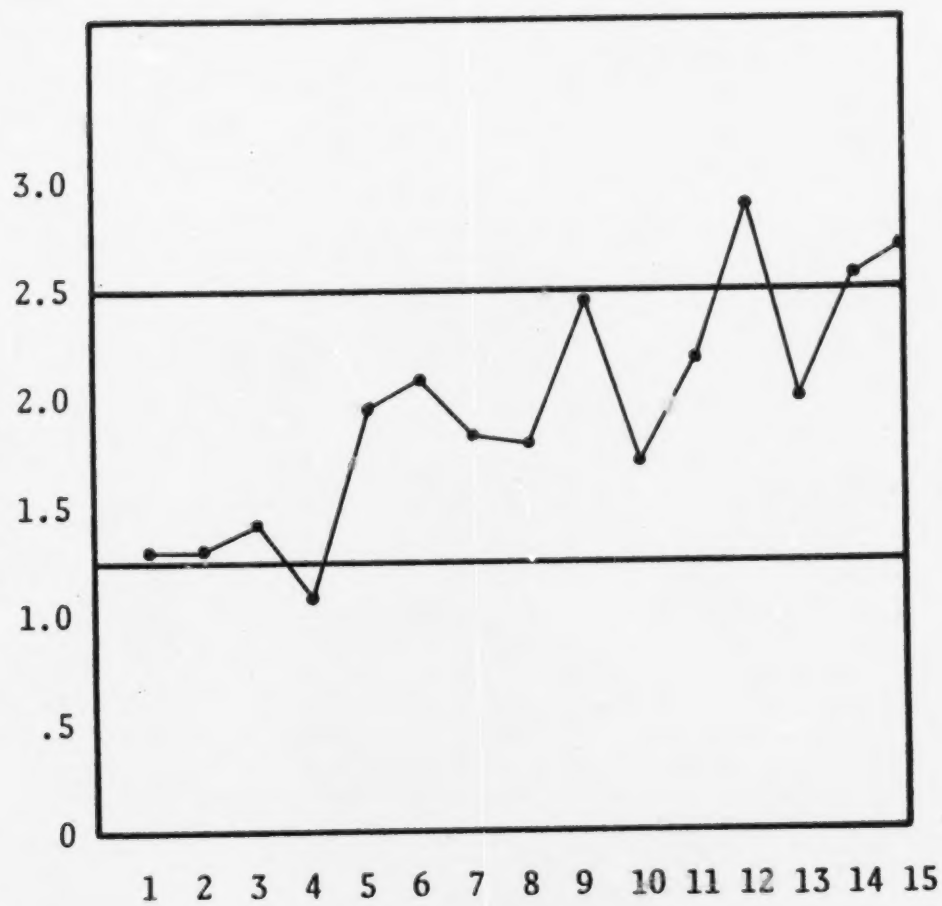
PER CENT OF GRADUATES
LIVING OUT-OF-STATE

$\bar{X}_{15\ years} = 33\%$



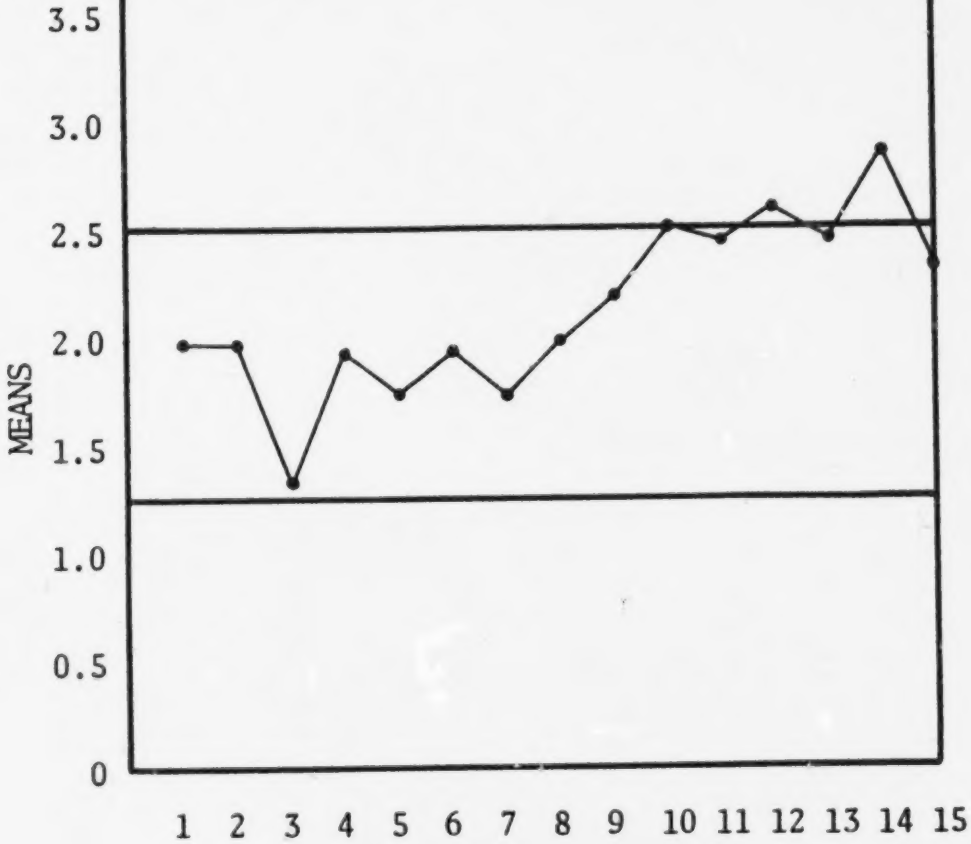
JOB - RESIDENCE CHANGES (EET)

FIGURE - 8-A



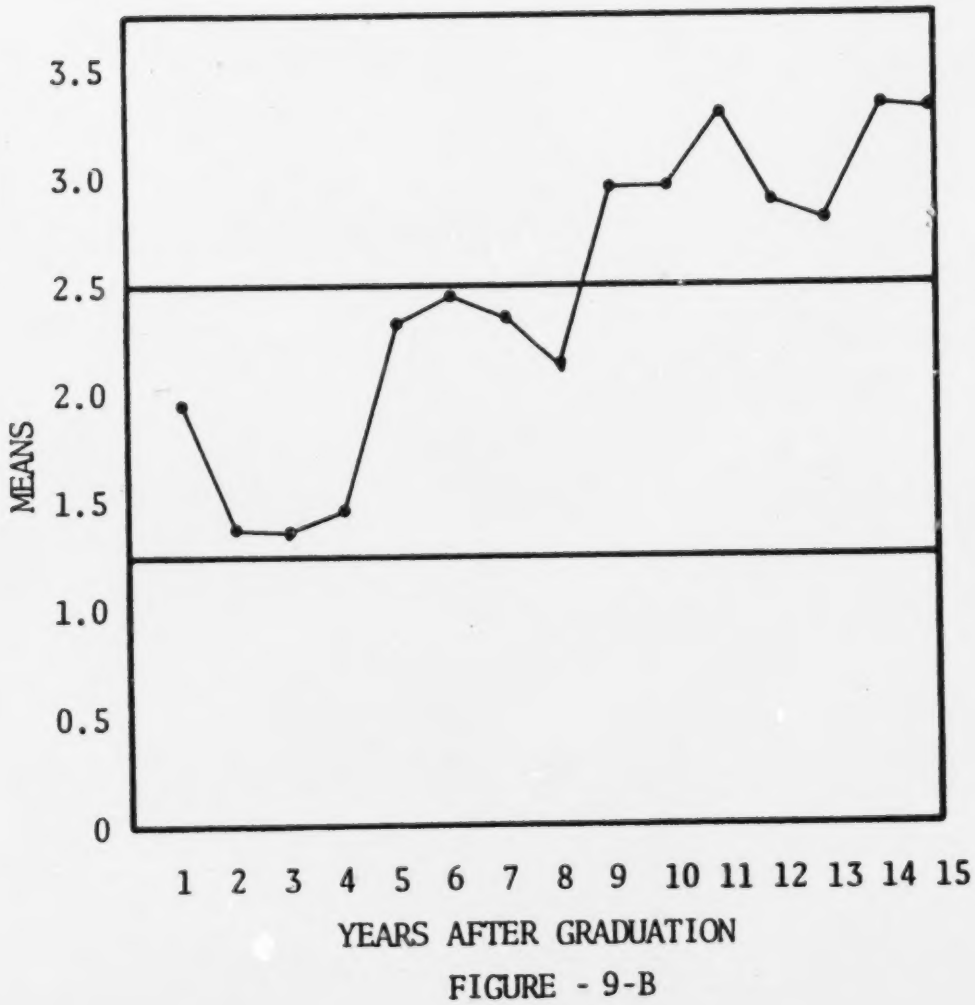
JOB - RESIDENCE CHANGES (DDT)

FIGURE - 8-B



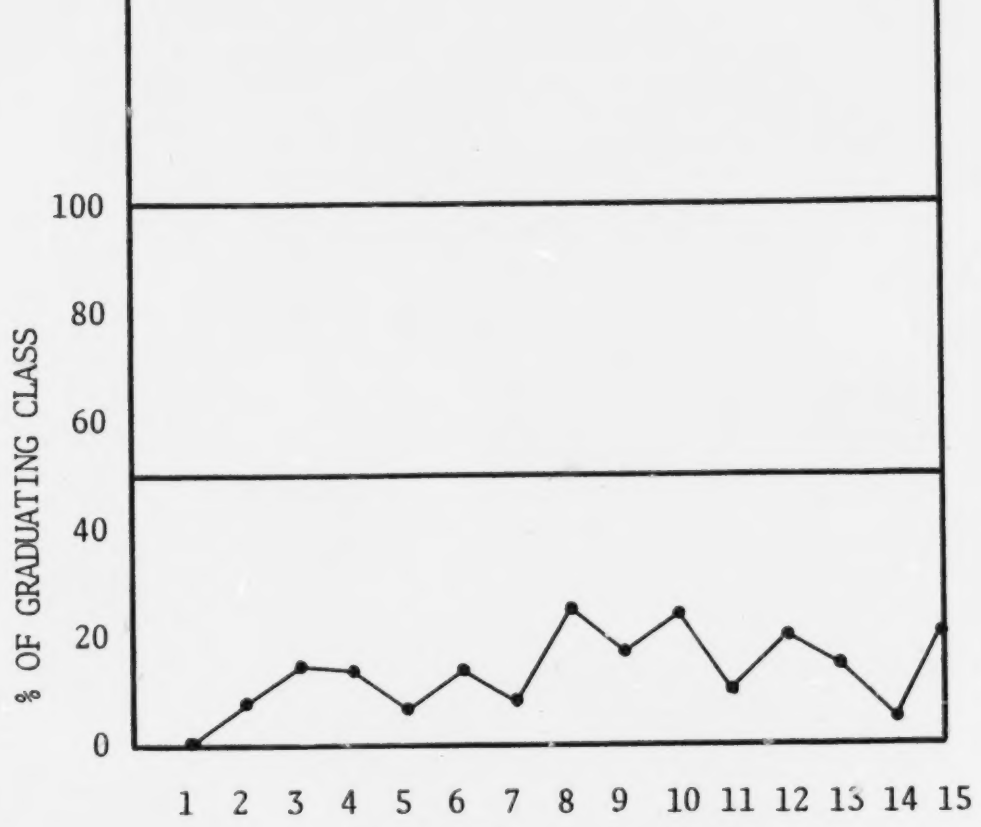
JOB-COMPANY CHANGES (EET)

FIGURE - 9-A



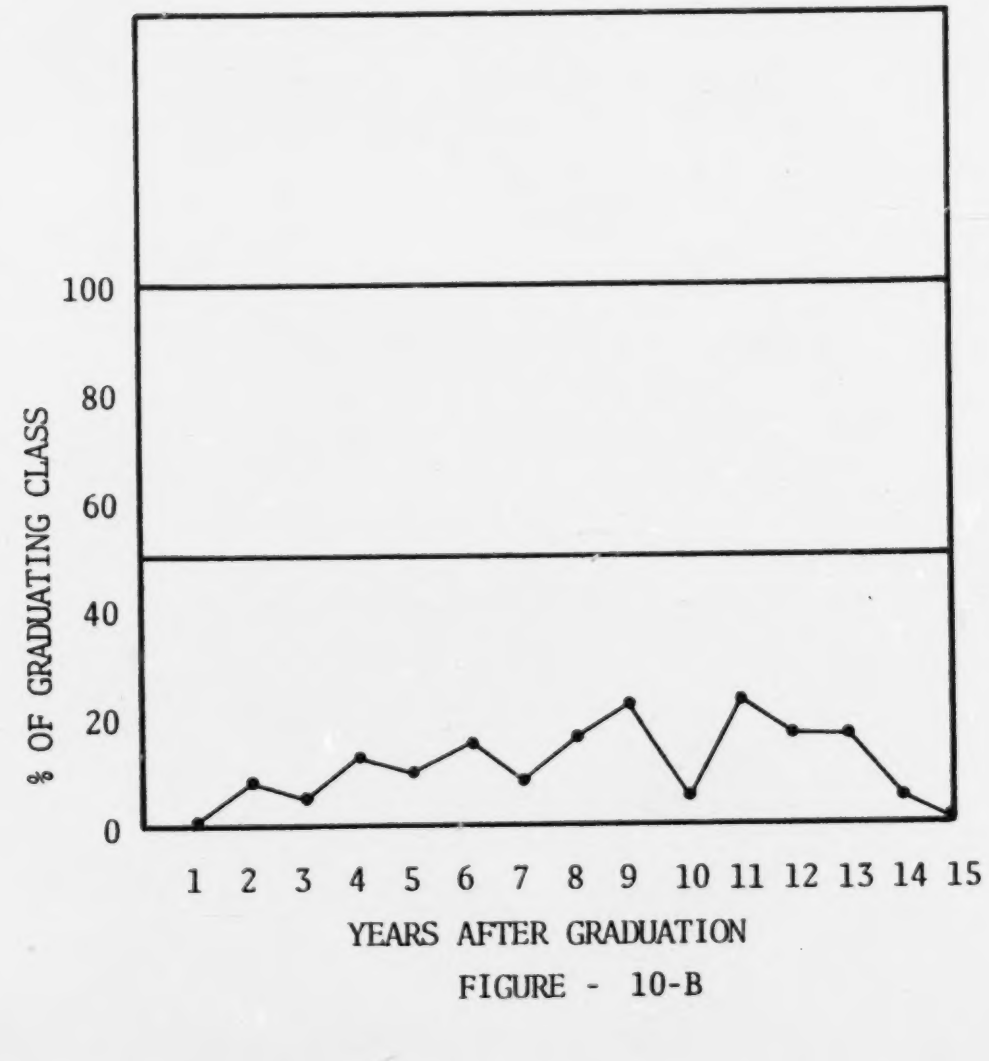
JOB-COMPANY CHANGES (DDT)

FIGURE - 9-B



ADVANCED DEGREES
(EET)

FIGURE - 10-A



ADVANCED DEGREES
(DDT)

FIGURE - 10-B

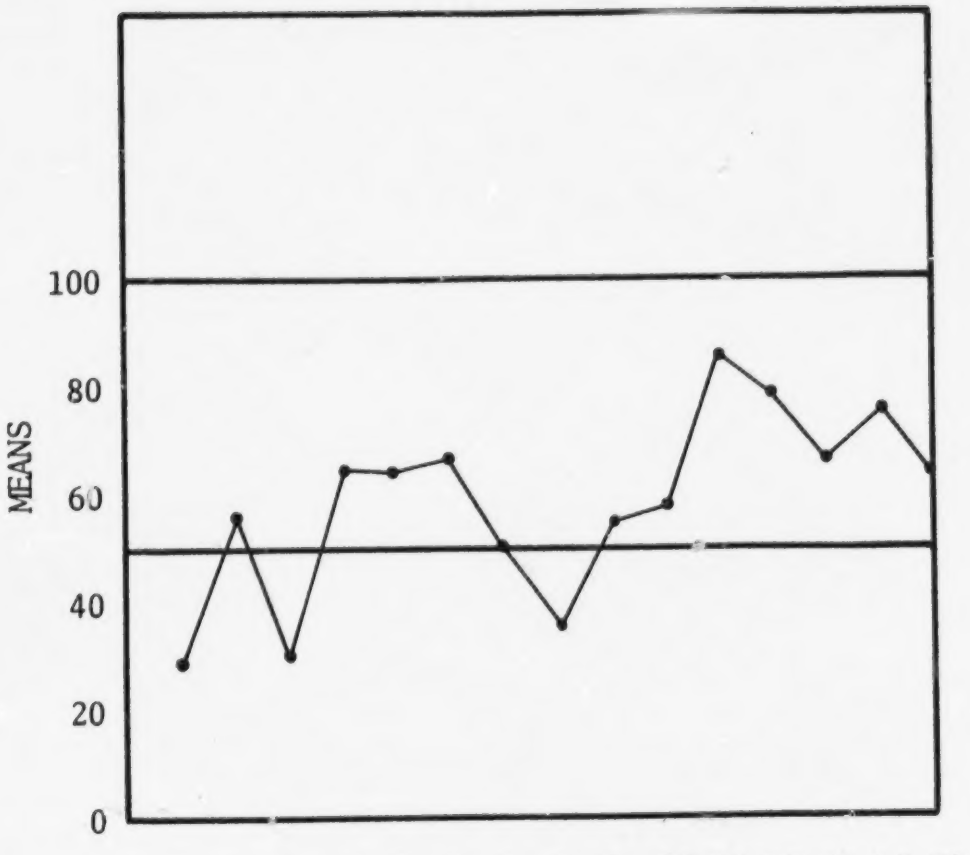


FIGURE - 11-A

PER CENT OF GRADUATES
THAT ARE MILITARY VETERANS
(EET)

$\bar{X}_{15 \text{ years}} = 58\%$

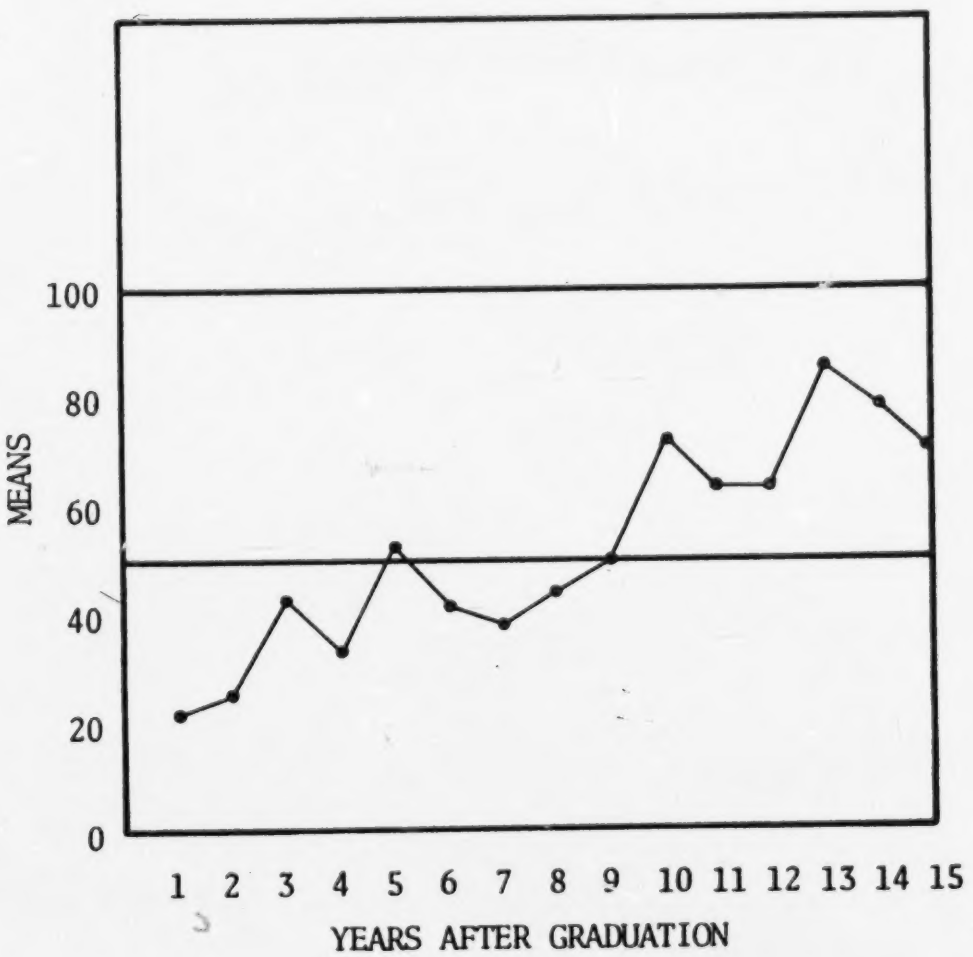
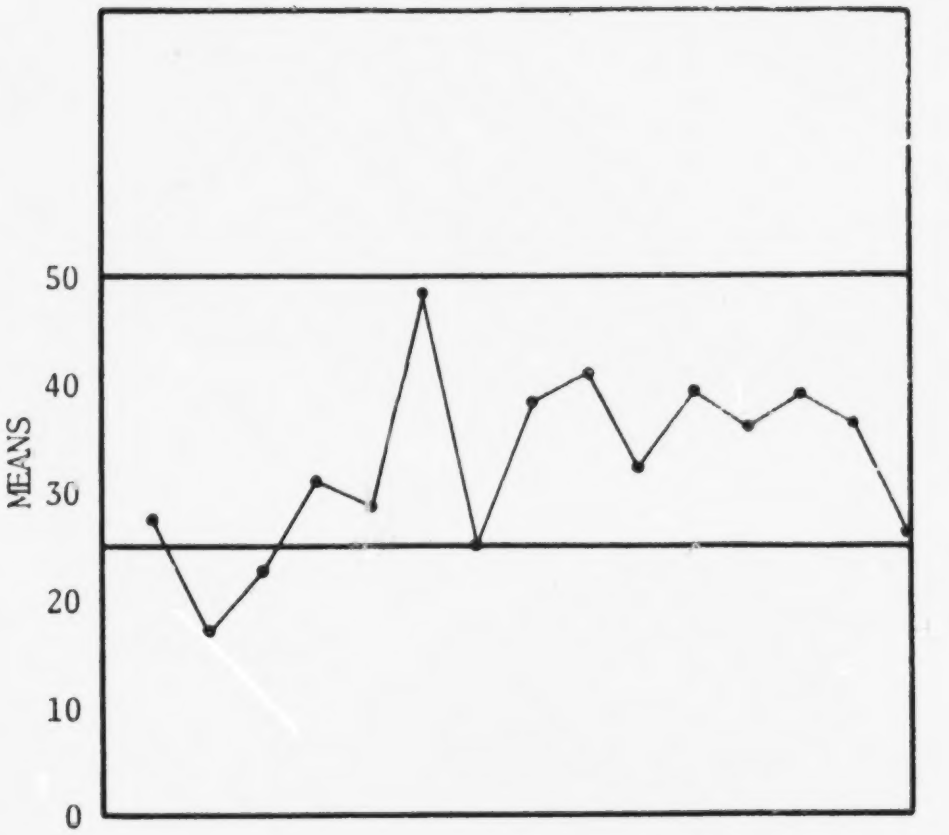


FIGURE - 11-B

PER CENT OF GRADUATES
THAT ARE MILITARY VETERANS
(DDT)

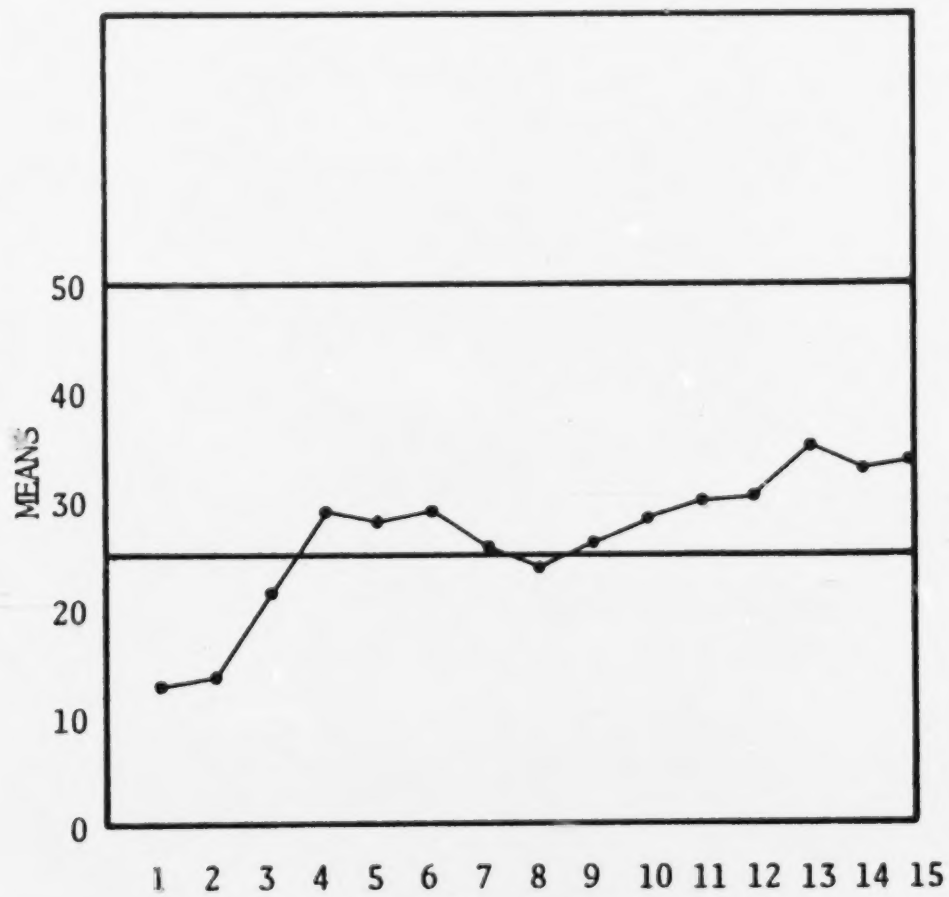
$\bar{X}_{15 \text{ years}} = 52\%$



MONTHS IN MILITARY SERVICE (EET)

$\bar{X}_{15 \text{ years}} = 32.5$

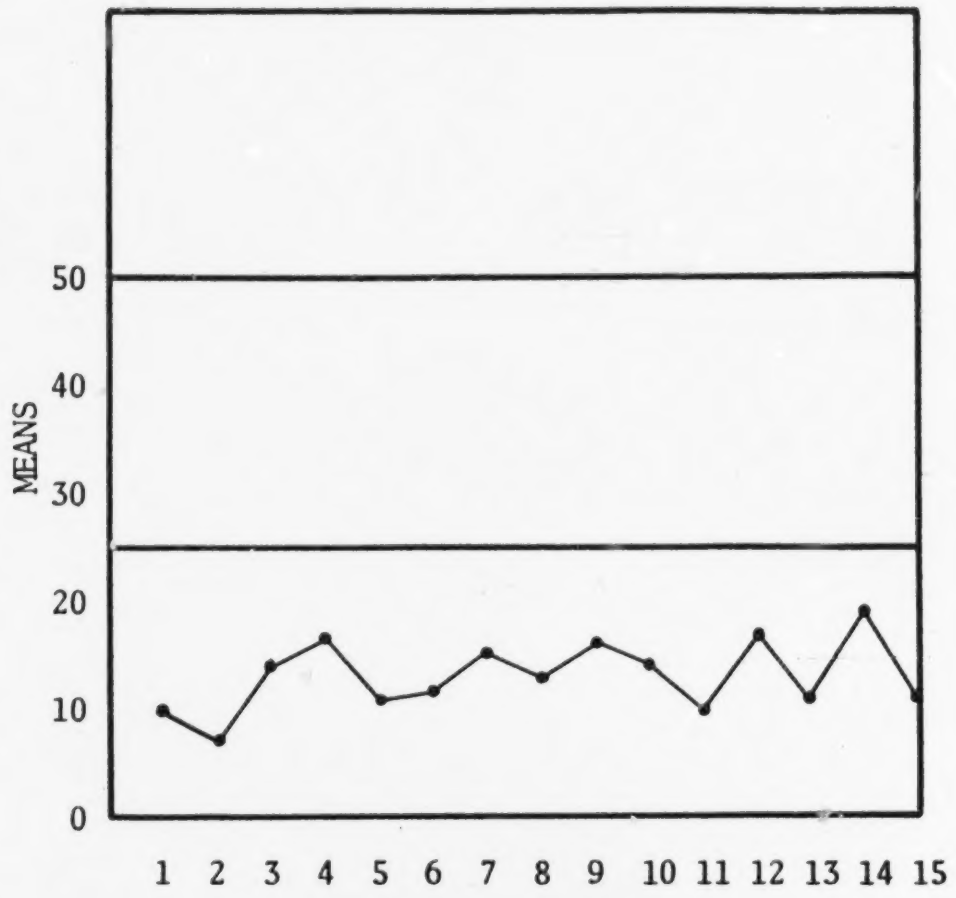
FIGURE - 12-A



MONTHS IN MILITARY SERVICE (DDT)

$\bar{X}_{15 \text{ years}} = 26.7$

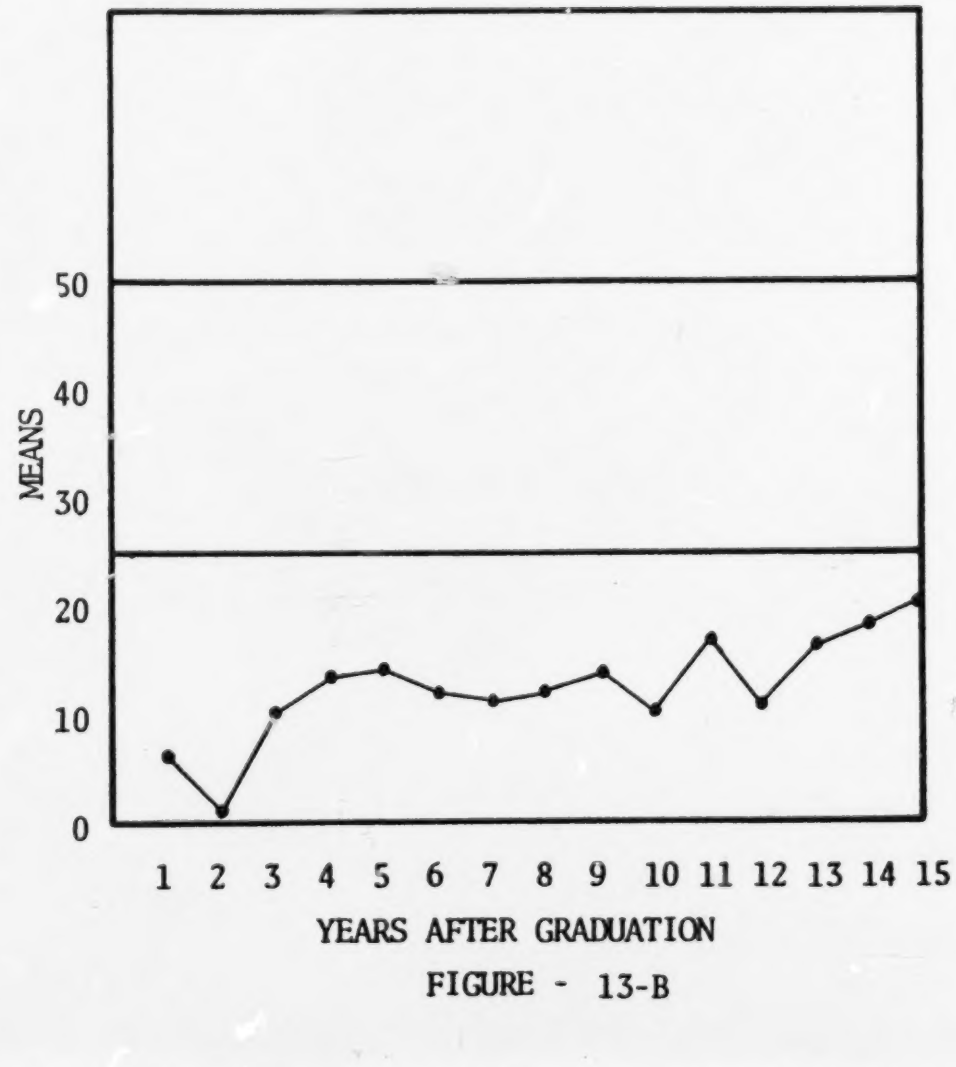
FIGURE - 12-B



MONTHS IN DOMESTIC MILITARY SERVICE BY VETERANS (EET)

$\bar{X}_{15 \text{ years}} = 12.6$

FIGURE - 13-A



MONTHS IN DOMESTIC MILITARY SERVICE BY VETERANS (DDT)

$\bar{X}_{15 \text{ years}} = 12.3$

FIGURE - 13-B

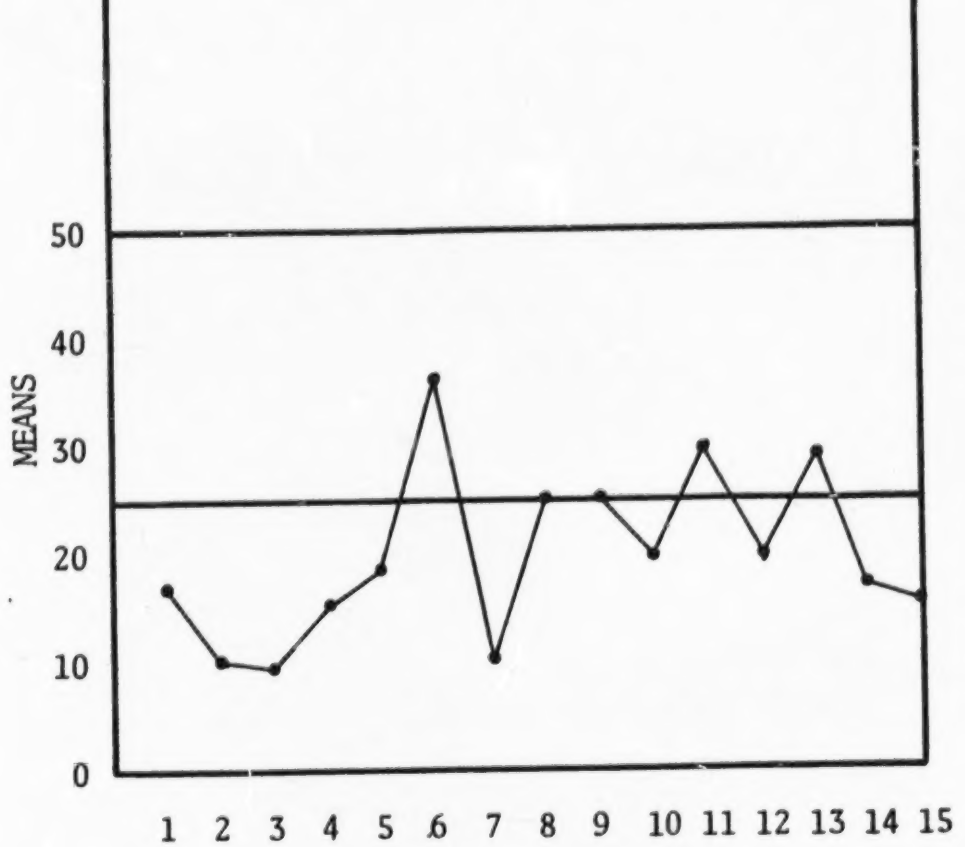


FIGURE - 14-A

MONTHS SERVED OVERSEAS
BY VETERANS
(EET)

$\bar{X}_{15\ years} = 18.1$

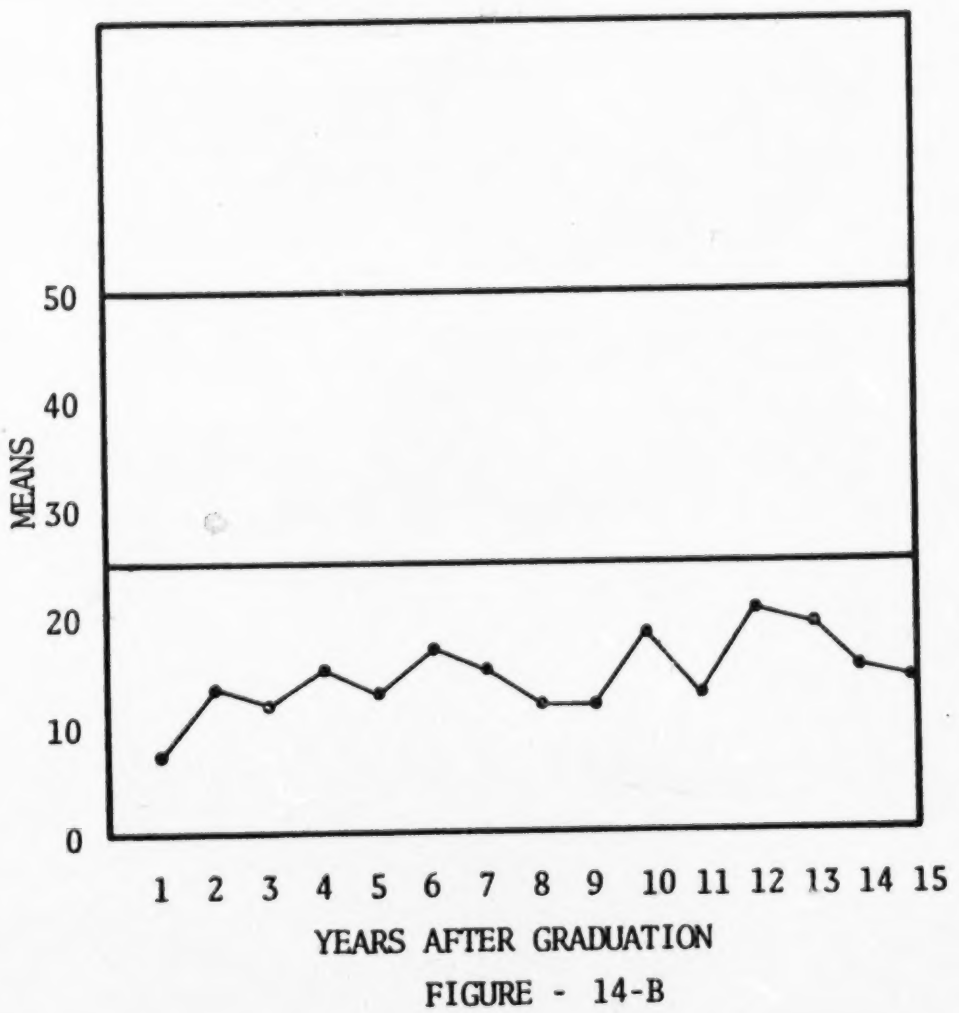


FIGURE - 14-B

MONTHS SERVED OVERSEAS
BY VETERANS
(DDT)

$\bar{X}_{15\ years} = 14.3$

COVER LETTER AND QUESTIONNAIRE

Dear Penn State Graduate:

The Pennsylvania State University is conducting a follow-up study of the associate degree graduates of the Commonwealth Campuses. This study has several major purposes:

1. To learn what has happened to you since you graduated.

2. To learn how you feel about the adequacy of the teaching you received in both the basic and specialized courses.

3. To determine the relationship between your associate degree program and your career.

Your responses, along with those of other associate degree graduates, will serve as a very important part of the evaluation of the Commonwealth Campus curriculums. This evaluation will serve as the basis for recommending changes that could lead to the improvement of the associate degree programs for the benefit of future graduates. Therefore, it can be seen that your help is critically needed.

We have enclosed a short questionnaire for you to fill out. Would you be kind enough to take fifteen minutes or so and answer each question? Also, we request that you be completely honest and direct with your answers.

Upon completing the questionnaire, would you send it back to us in the enclosed pre-addressed envelope?

Thank you for your invaluable assistance. Best wishes.

Sincerely,

Angelo C. Gillie
Director of the Study

COMMONWEALTH CAMPUS STUDY

A. Name _____

B. Graduate from (circle the appropriate program): 1. DDT; 2. EET; 3. Other

C. Circle the Commonwealth Campus where you received your Associate Degree:

1. Allentown
2. Altoona
3. Beaver
4. Behrend
5. Berks
6. Capitol
7. Delaware County
8. DuBois
9. Fayette
10. Hazleton
11. McKeesport
12. Mont Alto
13. New Kensington
14. Ogontz
15. Schuylkill
16. Shenango
17. Wilkes-Barre
18. Worthington-Scranton
19. York

D. Year of graduation from Penn State Associate Degree Program 19____

E. Present Address _____
Street Town State Zip

F. Marital Status: Single; Divorced; Separated; Widower
No. of Dependents (Include Spouse) _____

G. Military Experience (circle the appropriate item): 1. Yes 2. No 3. Overseas
4. Domestic _____time served (mos.)

YOUR WORK

Information about your first job after earning the Associate Degree:

H. Employer's (Company) Name _____

I. First Job Salary $_____ per month (before taxes and other deductions)

J. How many miles was your first job from where you lived when you graduated from high school? _____miles

Information About Your Present Job:

K. Employer's (Company) Name _____

L. Present Job Salary $_____ per month (before taxes and other deductions)

M. How many miles is your present job from where you lived when you graduated from high school? _____miles

N. How many times since you received your Associate Degree have you made a job change and a residence change at the same time? _____times

O. How many jobs with different companies have you held since receiving your Associate Degree? _____jobs

Circle those items in each list that described some of the things that you do in your job:

A	B	C
1. Copying	1. Supervising	1. Precision Working
2. Synthesizing	2. Serving	2. Tending
3. Comparing	3. Mentoring	3. Driving-Operating
4. Compiling	4. Instructing	4. Setting-Up
5. Coordinating	5. Persuading	5. Handling
6. Computing	6. Negotiating	6. Operating-Controlling
7. Analyzing	7. Speaking-Signaling	7. Manipulating

P. Rank order general groups A, B, and C above in accordance with their importance to your present job.

_____most important _____less important _____least important

Q. Circle the highest degree earned to date:

1. associate 2. bachelors 3. masters 4. doctorate

YOUR COURSE WORK AT PENN STATE

Following are several items relating to some of the basic courses you took in your Associate Degree Program at The Pennsylvania State University. For each item, "X" the appropriate spaces that best indicates your opinion of the quality of teaching in that subject. The degree to which you used it immediately after graduation, the degree to which you use it now, and its importance in the job you hope to get in the future. Please check one in each column.

SUBJECT	QUALITY OF INSTRUCTION				NEED FOR IT AFTER GRADUATION				YOUR NEED FOR IT NOW				NEED FOR IT TO GET DESIRED JOB IN THE FUTURE			
	Excellent	Good	Fair	Poor	Very Much	Much	Some	None	Very Much	Much	Some	None	Very Much	Much	Some	None
Freshman Mathematics	1___	2___	3___	4___	1___	2___	3___	4___	1___	2___	3___	4___	1___	2___	3___	4___
Freshman Science	1___	2___	3___	4___	1___	2___	3___	4___	1___	2___	3___	4___	1___	2___	3___	4___
English	1___	2___	3___	4___	1___	2___	3___	4___	1___	2___	3___	4___	1___	2___	3___	4___
Social Sciences	1___	2___	3___	4___	1___	2___	3___	4___	1___	2___	3___	4___	1___	2___	3___	4___

III. DDT GRADUATES ONLY

This is the final section of the survey and you are asked to give three responses for each of the items below. These topics deal with some of the major topics in the specialized portion of your Associate Degree Program. You are requested to evaluate them in terms of a) quality of instruction, b) the extent to which you used them immediately after graduation, and c) the extent to which you use them at the present time.

TOPIC	QUALITY OF INSTRUCTION					EXTENT USED WHEN FIRST GRADUATED				EXTENT USED NOW			
	Excellent	Good	Fair	Poor	Not Taught	Very Much	Much	Some	None	Very Much	Much	Some	None
AA Freehand sketching	1	2	3	4	5	1	2	3	4	1	2	3	4
AB Multiview layout	1	2	3	4	5	1	2	3	4	1	2	3	4
AC Graphical solutions	1	2	3	4	5	1	2	3	4	1	2	3	4
AD Kinematics	1	2	3	4	5	1	2	3	4	1	2	3	4
AE Strength of materials	1	2	3	4	5	1	2	3	4	1	2	3	4
AF Static load analysis	1	2	3	4	5	1	2	3	4	1	2	3	4
AG Dynamic load analysis	1	2	3	4	5	1	2	3	4	1	2	3	4
AH Analysis of structures	1	2	3	4	5	1	2	3	4	1	2	3	4
AI Manufacturing process	1	2	3	4	5	1	2	3	4	1	2	3	4
AJ Product design	1	2	3	4	5	1	2	3	4	1	2	3	4
AK Report writing	1	2	3	4	5	1	2	3	4	1	2	3	4
AL Computer programming	1	2	3	4	5	1	2	3	4	1	2	3	4

III EET GRADUATES ONLY

This is the final section of the survey and you are asked to give three responses for each of the items below. These topics deal with some of the major topics in the specialized portion of your Associate Degree Program. You are requested to evaluate them in terms of a) quality of instruction, b) the extent to which you used them immediately after graduation, and c) the extent to which you use them at the present time.

TOPIC	QUALITY OF INSTRUCTION					EXTENT USED WHEN FIRST GRADUATED				EXTENT USED NOW			
	Excellent	Good	Fair	Poor	Not Taught	Very Much	Much	Some	None	Very Much	Much	Some	None
BA Vacuum tube theory	1	2	3	4	5	1	2	3	4	1	2	3	4
BB Transistor circuit theory	1	2	3	4	5	1	2	3	4	1	2	3	4
BC Integrated circuits	1	2	3	4	5	1	2	3	4	1	2	3	4
BD Use of Electronic test equipment	1	2	3	4	5	1	2	3	4	1	2	3	4
BE Pulse circuits	1	2	3	4	5	1	2	3	4	1	2	3	4
BF Logic circuits	1	2	3	4	5	1	2	3	4	1	2	3	4
BG Communications circuits	1	2	3	4	5	1	2	3	4	1	2	3	4
BH Industrial Electronics circuits	1	2	3	4	5	1	2	3	4	1	2	3	4
BI Microwave theory	1	2	3	4	5	1	2	3	4	1	2	3	4
BJ Trouble-shooting analysis	1	2	3	4	5	1	2	3	4	1	2	3	4
BK Binary Arithmetic	1	2	3	4	5	1	2	3	4	1	2	3	4
BL Boolean Algebra	1	2	3	4	5	1	2	3	4	1	2	3	4

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1955 EET 67

N = 5 or less are disregarded 2: QUI responses of "not taught" have been excluded

Variable	Variable No.	Mean	S.D.
Dependents	1	3.63	1.41
First Salary	2	318	46.6
First Miles	3	641	999
Present Salary	4	1075	353
Present Miles	5	325	776
Job Changes	6	1.58	.79
Different Jobs	7	2.29	.913
Freshman Math	8	1.85	.55
Need First	9	1.92	.76
Need Now	10	2.23	1.01
Need Future	11	2.33	.984
Freshman Science	12	2.40	.52
Need First	13	2.30	.95
Need Now	14	2.00	.87
Need Future	15	2.00	.87
Freshman English	16	2.27	.80
Need First	17	2.00	.76
Need Now	18	1.73	.70
Need Future	19	1.64	.74
Social Science	20	2.56	.73
Need First	21	3.00	.67
Need Now	22	2.30	.95
Need Future	23	2.56	.73
Vaccum Tubes	24	2.06	.77
Need First	25	2.94	.93
Need Now	26	3.31	.79
Transistor Circuits	27	0.00	0
Need First	28	3.69	60
Need Now	29	2.81	1.22
Integrated Circuits	30	0.00	0
Need First	31	4.00	0
Need Now	32	3.06	1.06
Test Equipment	33	2.20	.94
Need First	34	2.38	.96
Need Now	35	2.63	.96
Pulse Circuits	36	0.00	0
Need First	37	3.69	.79
Need Now	38	3.25	1.13
Logic Circuits	39	0.00	0
Need First	40	3.94	.25
Need Now	41	3.19	1.05
Communication Circuits	42	2.50	.55
Need First	43	3.56	.73
Need Now	44	3.50	.73
Industrial Electronic Circuits	45	2.28	.61
Need First	46	2.13	.81
Need Now	47	3.00	1.03
Microwave Theories	48	0.00	0
Need First	49	3.69	.87
Need Now	50	3.88	.34
Trouble Shooting	51	2.5	.55
Need First	52	2.88	1.20
Need Now	53	2.81	1.28
Binary Arithmetic	54	0.00	0
Need First	55	3.81	.54
Need Now	56	3.5	.82
Boolean Algebra	57	0.00	0
Need First	58	3.81	.54
Need Now	59	3.50	.82

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1956 EET 68

Variable	Variable No.	Mean	S.D.
Dependents	1	3.47	1.30
First Salary	2	3.59	57.4
First Miles	3	3.67	797.4
Present Salary	4	995	234
Present Miles	5	340	799
Job Changes	6	2.11	1.37
Different Jobs	7	2.83	1.85
Freshman Math	8	1.73	.80
Need First	9	2.00	.85
Need Now	10	2.20	.86
Need Future	11	2.00	.88
Freshman Science	12	1.64	.63
Need First	13	2.33	1.05
Need Now	14	2.53	.83
Need Future	15	2.29	.83
Freshman English	16	1.87	1.06
Need First	17	1.93	.96
Need Now	18	1.93	1.10
Need Future	19	1.71	.91
Social Science	20	2.46	1.13
Need First	21	3.00	.85
Need Now	22	2.73	.96
Need Future	23	2.50	.94
Vacuum Tubes	24	1.60	.63
Need First	25	2.53	1.30
Need Now	26	3.53	.83
Transistor Circuits	27	0	0
Need First	28	2.93	1.33
Need Now	29	2.47	1.30
Integrated Circuits	30	0	0
Need First	31	3.20	1.26
Need Now	32	2.53	1.46
Test Equipment	33	2.20	.68
Need First	34	2.53	1.13
Need Now	35	2.47	1.13
Pulse Circuits	36	0	0
Need First	37	3.13	1.25
Need Now	38	2.93	1.22
Logic Circuits	39	0	0
Need First	40	3.33	1.05
Need Now	41	2.60	1.40
Communication Circuits	42	2.18	.87
Need First	43	3.13	.99
Need Now	44	3.47	.92
Industrial Electronics	45	2.07	.83
Need First	46	2.87	1.19
Need Now	47	3.20	.94
Microwave Theory	48	0	0
Need First	49	3.80	.56
Need Now	50	3.80	.41
Trouble Shooting	51	2.22	.83
Need First	52	2.40	1.24
Need Now	53	2.40	1.12
Binary Arithmetic	54	0	0
Need First	55	3.47	.92
Need Now	56	2.80	1.37
Boolean Algebra	57	0	0
Need First	58	2.40	1.12
Need Now	59	2.93	1.38

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1957 EET 69

Variable	Variable No.	Mean	S.D.
Dependents	1	3.67	1.11
First Salary	2	389	65.7
First Miles	3	303	676
Present Salary	4	1065	314
Present Miles	5	76.1	93.7
Job Changes	6	1.57	1.02
Different Jobs	7	2.47	1.30
Freshman Math	8	1.86	.71
Need First	9	2.00	.87
Need Now	10	2.14	.99
Need Future	11	2.00	.95
Freshman Science	12	2.11	.68
Need First	13	2.39	.85
Need Now	14	2.50	.79
Need Future	15	2.35	.86
Freshman English	16	1.59	.67
Need First	17	2.23	.87
Need Now	18	1.91	.68
Need Future	19	1.81	.51
Social Science	20	2.71	.69
Need First	21	3.00	.91
Need Now	22	2.83	.92
Need Future	23	2.53	.94
Vacuum Tubes	24	1.71	.78
Need First	25	2.64	1.04
Need Now	26	3.41	.67
Transistor Circuits	27	0	0
Need First	28	3.00	.97
Need Now	29	2.24	1.09
Integrated Circuits	30	0	0
Need First	31	3.80	.52
Need Now	32	2.62	1.07
Testing Equipment	33	2.19	.75
Need First	34	2.62	1.07
Need Now	35	2.68	.99
Pulse Circuits	36	0	0
Need First	37	3.35	.88
Need Now	38	3.20	1.01
Logic Circuits	39	0	0
Need First	40	3.45	.94
Need Now	41	2.80	1.11
Communication Circuits	42	2.56	.78
Need First	43	3.33	.86
Need Now	44	3.29	.90
Industrial Electronics	45	2.14	.91
Need First	46	2.71	1.01
Need Now	47	3.00	.98
Microwave theory	48	0	0
Need First	49	3.70	.80
Need Now	50	3.74	.73
Trouble Shooting	51	2.47	1.06
Need First	52	2.60	.99
Need Now	53	2.45	1.00
Binary Arithmetic	54	0	0
Need First	55	3.40	.94
Need Now	56	2.90	1.21
Boolean Algebra	57	0	0
Need First	58	3.60	.82
Need Now	59	3.25	1.02

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1958 EET 70

Variable	Variable No.	Mean	S.D.
Dependents	1	3.65	1.31
Frist Salary	2	381	149
First Miles	3	143	144
Present Salary	4	988	257
Present Miles	5	266	486
Job Changes	6	2.13	1.31
Different Jobs	7	2.58	1.41
Freshman Math	8	1.91	.59
Need First	9	2.09	.98
Need Now	10	2.25	1.11
Need Future	11	2.25	1.04
Freshman Science	12	2.17	.56
Need First	13	2.11	.99
Need Now	14	2.35	1.13
Need Future	15	2.17	1.05
Freshman English	16	1.88	.66
Need First	17	2.24	.94
Need Now	18	1.89	.89
Need Future	19	1.90	.92
Social Sciences	20	2.47	.60
Need First	21	2.92	.78
Need Now	22	2.75	.90
Need Future	23	2.73	.94
Vacuum Tubes	24	1.94	.80
Need First	25	2.70	1.02
Need Now	26	3.55	.79
Transistor Circuits	27	2.30	.82
Need First	28	3.03	1.09
Need Now	29	2.85	1.18
Integrated Circuits	30	0	0
Need First	31	3.48	.93
Need Now	32	3.03	1.15
Test Equipment	33	2.43	.77
Need First	34	2.36	1.25
Need Now	35	2.73	1.31
Pulse Circuits	36	2.11	.33
Need First	37	3.23	1.18
Need Now	38	3.28	1.14
Logic Circuits	39	0	0
Need First	40	3.48	.96
Need Now	41	3.06	1.19
Communication Circuits	42	2.35	.78
Need First	43	2.94	1.12
Need Now	44	3.41	1.01
Industrial Electronics	45	2.40	.86
Need First	46	3.15	1.00
Need Now	47	3.21	.93
Microwave Theory	48	0	0
Need First	49	3.48	1.09
Need Now	50	3.65	.88
Trouble Shooting	51	2.91	.89
Need First	52	2.24	1.30
Need Now	53	2.75	1.32
Binary Arithmetic	54	0	0
Need First	55	3.48	.85
Need Now	56	3.00	1.10
Boolean Algebra	57	0	0
Need First	58	3.81	.54
Need Now	59	3.32	.87

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1959 EET 71

Variable	Variable No.	Mean	S.D.
Dependents	1	3.37	1.62
First Salary	2	411	67
First Miles	3	260	543
Present Salary	4	978	258
Present Miles	5	152	167
Job Changes	6	2.06	.80
Different Jobs	7	2.46	1.30
Freshman Math	8	2.00	.86
Need First	9	2.21	.88
Need Now	10	2.21	.98
Need Future	11	2.17	1.00
Freshman Science	12	2.35	.75
Need First	13	2.46	.90
Need Now	14	2.56	1.05
Need Future	15	2.54	1.03
Freshman English	16	2.07	.92
Need First	17	1.96	.79
Need Now	18	1.76	.83
Need Future	19	1.79	.86
Social Science	20	2.65	.88
Need First	21	3.00	.90
Need Now	22	2.60	.96
Need Future	23	2.48	1.05
Vacuum Tubes	24	2.15	.95
Need First	25	2.54	1.10
Need Now	26	3.26	.97
Transistor Circuits	27	3.07	.88
Need First	28	2.50	1.04
Need Now	29	2.50	1.11
Integrated Circuits	30	2.86	.90
Need First	31	3.43	.84
Need Now	32	2.61	1.10
Test Equipment	33	2.44	.87
Need First	34	1.75	1.11
Need Now	35	2.39	1.17
Pulse Circuits	36	2.43	.79
Need First	37	2.75	1.24
Need Now	38	3.21	.99
Logic Circuits	39	0	0
Need First	40	2.86	1.33
Need Now	41	3.07	1.12
Communication Circuits	42	2.58	.88
Need First	43	3.11	.96
Need Now	44	3.04	1.00
Industrial Electronics	45	2.48	.77
Need First	46	3.14	.85
Need Now	47	2.86	1.18
Microwave Thoery	48	3.00	.82
Need First	49	3.36	1.03
Need Now	50	3.39	1.07
Trouble Shooting	51	2.85	.99
Need First	52	2.04	1.23
Need Now	53	2.42	1.26
Binary Arithmetic	54	2.89	1.05
Need First	55	2.75	1.21
Need Now	56	2.93	1.01
Boolean Algebra	57	0	0
Need First	58	3.11	1.26
Need Now	59	3.07	1.12

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1960 EET 72

Variable	Variable No.	Mean	S.D.
Dependents	1	3.26	.83
First Salary	2	402	73.2
First Miles	3	176	205
Present Salary	4	944	144
Present Miles	5	268	537
Job Changes	6	1.79	1.02
Different Jobs	7	2.50	1.38
Freshman Math	8	1.78	.65
Need First	9	2.13	.88
Need Now	10	1.93	.83
Need Future	11	1.95	.80
Freshman Science	12	1.88	.61
Need First	13	2.33	.83
Need Now	14	2.20	.79
Need Future	15	2.11	.80
Freshman English	16	2.10	.74
Need First	17	2.40	.84
Need Now	18	1.90	.78
Need Future	19	1.68	.77
Social Science	20	2.62	.92
Need First	21	3.11	.74
Need Now	22	2.73	.84
Need Future	23	2.43	.95
Vacuum Tubes	24	2.18	.60
Need First	25	2.79	1.09
Need Now	26	3.34	.94
Transistor Circuits	27	2.93	.81
Need First	28	2.69	1.09
Need Now	29	2.32	1.23
Integrated Circuits	30	2.67	.71
Need First	31	3.62	.60
Need Now	32	2.29	1.25
Test Equipment	33	2.32	.84
Need First	34	1.97	1.10
Need Now	35	2.26	1.06
Pulse Circuits	36	2.40	.63
Need First	37	2.82	1.04
Need Now	38	2.50	1.08
Logic Circuits	39	2.64	.67
Need First	40	2.79	1.19
Need Now	41	2.37	1.17
Communication Circuits	42	2.46	.82
Need First	43	3.00	1.03
Need Now	44	3.05	1.05
Industrial Electronics	45	2.38	.78
Need First	46	2.87	1.07
Need Now	47	2.73	1.02
Microwave Theory	48	3.00	1.00
Need First	49	3.24	1.23
Need Now	50	3.35	1.04
Trouble Shooting	51	2.75	.75
Need First	52	1.97	1.15
Need Now	53	2.08	1.13
Binary Arithmetic	54	2.30	.67
Need First	55	3.22	1.07
Need Now	56	2.81	1.09
Boolean Algebra	57	2.63	.92
Need First	58	3.26	1.07
Need Now	59	2.94	1.09

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1961 EET 73

Variable	Variable No.	Mean	S.D.
Dependents	1	2.91	1.04
First Salary	2	396	76.5
First Miles	3	292	628
Present Salary	4	949	138
Present Miles	5	405	759
Job Changes	6	1.90	1.10
Different Jobs	7	2.17	.99
Freshman Math	8	1.96	.77
Need First	9	2.22	.90
Need Now	10	1.97	.82
Need Future	11	2.04	.93
Freshman Science	12	2.32	.72
Need First	13	2.36	1.05
Need Now	14	2.45	.74
Need Future	15	2.37	.85
Freshman English	16	2.00	.80
Need First	17	2.43	.73
Need Now	18	2.00	.74
Need Future	19	1.78	.74
Social Science	20	2.89	.74
Need First	21	3.11	.66
Need Now	22	2.58	.69
Need Future	23	2.21	.71
Vacuum Tubes	24	2.09	.60
Need First	25	3.17	.83
Need Now	26	3.43	.95
Transistor Circuits	27	2.41	.91
Need First	28	2.57	1.08
Need Now	29	2.26	1.21
Integrated Circuits	30	2.50	1.05
Need First	31	3.24	1.04
Need Now	32	2.24	1.14
Test Equipment	33	2.48	.87
Need First	34	2.00	1.24
Need Now	35	2.39	1.16
Pulse Circuits	36	3.08	.49
Need First	37	2.82	1.14
Need Now	38	2.46	1.26
Logic Circuits	39	3.00	.76
Need First	40	2.91	1.11
Need Now	41	2.45	1.26
Communication Circuits	42	2.78	.80
Need First	43	3.09	1.12
Need Now	44	3.04	1.19
Industrial Electronics	45	2.38	.74
Need First	46	3.36	.79
Need Now	47	3.23	.87
Microwave Theory	48	2.75	.71
Need First	49	3.43	.86
Need Now	50	3.38	.92
Trouble Shooting	51	2.71	.61
Need First	52	2.33	1.02
Need Now	53	2.48	1.12
Binary Arithmetic	54	2.79	.97
Need First	55	2.76	1.18
Need Now	56	2.67	1.02
Boolean Algebra	57	2.33	1.02
Need First	58	2.95	1.10
Need Now	59	3.00	.97

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1962 EET 74

Variable	Variable No.	Mean	S.D.
Dependents	1	2.84	1.05
First Salary	2	416	90.9
First Miles	3	396	778
Present Salary	4	882	138
Present Miles	5	359	789
Job Changes	6	1.80	.83
Different Jobs	7	1.96	1.02
Freshman Math	8	2.00	.71
Need First	9	2.30	.97
Need Now	10	2.11	.88
Need Future	11	1.95	.97
Freshman Science	12	2.06	.76
Need First	13	2.51	.85
Need Now	14	2.43	.98
Need Future	15	2.14	.94
Freshman English	16	2.46	.98
Need First	17	2.56	.88
Need Now	18	2.17	.81
Need Future	19	1.92	.87
Social Science	20	2.75	.80
Need First	21	3.12	.55
Need Now	22	2.88	.78
Need Future	23	2.64	.82
Vacuum Tubes	24	2.06	.74
Need First	25	3.12	.84
Need Now	26	3.21	.98
Transistor Circuits	27	2.94	.93
Need First	28	2.64	1.06
Need Now	29	2.33	1.24
Integrated Circuits	30	2.89	1.05
Need First	31	3.24	.99
Need Now	32	2.37	1.25
Test Equipment	33	2.34	.79
Need First	34	2.12	1.02
Need Now	35	2.27	1.13
Pulse Circuits	36	2.88	.86
Need First	37	3.03	1.03
Need Now	38	2.71	1.22
Logic Circuits	39	2.50	.84
Need First	40	3.10	1.13
Need Now	41	2.39	1.33
Communication Circuits	42	2.50	.57
Need First	43	3.32	.84
Need Now	44	3.35	.77
Industrial Electronics	45	2.55	.75
Need First	46	3.21	.59
Need Now	47	2.97	1.00
Microwave Theory	48	2.50	.53
Need First	49	3.57	.73
Need Now	50	3.48	.81
Trouble Shooting	51	2.78	.85
Need First	52	2.34	.97
Need Now	53	2.44	1.16
Binary Arithmetic	54	1.88	.35
Need First	55	3.47	.68
Need Now	56	2.67	1.06
Boolean Algebra	57	0	0
Need First	58	3.59	.68
Need Now	59	2.76	1.09

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1963 EET 75

Variable	Variable No.	Mean	S.D.
Dependents	1	2.38	1.17
First Salary	2	427	77.1
First Miles	3	335	542
Present Salary	4	909	121
Present Miles	5	1117	2564
Job Changes	6	1.33	.62
Different Jobs	7	1.73	.86
Freshman Math	8	2.16	.68
Need First	9	2.29	.82
Need Now	10	2.19	.83
Need Future	11	2.06	.89
Freshman Science	12	2.03	.59
Need First	13	2.45	.85
Need Now	14	2.45	.89
Need Future	15	2.23	.97
Freshman English	16	2.13	.75
Need First	17	2.16	.82
Need Now	18	1.87	.76
Need Future	19	1.72	.73
Social Science	20	2.32	.87
Need First	21	3.10	.65
Need Now	22	2.97	.84
Need Future	23	2.87	.88
Vacuum Tubes	24	1.87	.67
Need First	25	3.10	.76
Need Now	26	3.33	.71
Transistor Circuits	27	2.42	.85
Need First	28	2.70	1.02
Need Now	29	2.43	1.22
Integrated Circuits	30	2.67	.98
Need First	31	3.59	.73
Need Now	32	2.63	1.07
Test Equipment	33	2.61	.84
Need First	34	2.37	1.07
Need Now	35	2.10	1.09
Pulse Circuits	36	2.80	.70
Need First	37	3.00	.94
Need Now	38	2.50	1.17
Logic Circuits	39	2.79	.83
Need First	40	3.00	1.02
Need Now	41	2.17	1.29
Communication Circuits	42	2.72	.74
Need First	43	3.21	.90
Need Now	44	2.97	1.15
Industrial Electronics	45	2.50	.69
Need First	46	3.23	.86
Need Now	47	2.80	1.24
Microwave Theory	48	2.83	.98
Need First	49	3.79	.69
Need Now	50	3.74	.59
Trouble Shooting	51	2.91	1.00
Need First	52	2.17	.97
Need Now	53	1.97	1.09
Binary Arithmetic	54	2.50	.81
Need First	55	2.87	1.17
Need Now	56	1.97	1.19
Boolean Algebra	57	2.69	.75
Need First	58	3.41	.87
Need Now	59	2.69	1.20

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1964 EET 76

Variable	Variable No.	Mean	S.D.
Dependents	1	2.12	.95
First Salary	2	428	87.7
First Miles	3	120	101
Present Salary	4	748	153
Present Miles	5	226	529
Job Changes	6	1.40	.51
Different Jobs	7	1.88	.97
Freshman Math	8	2.11	.73
Need First	9	2.41	.96
Need Now	10	1.01	1.02
Need Future	11	1.00	1.01
Freshman Science	12	2.18	.80
Need First	13	2.71	.91
Need Now	14	2.66	.94
Need Future	15	2.55	1.00
Freshman English	16	1.91	.75
Need First	17	2.53	.96
Need Now	18	2.06	.88
Need Future	19	1.89	.89
Social Science	20	2.39	.75
Need First	21	3.12	.86
Need Now	22	2.84	.93
Need Future	23	2.84	1.00
Vacuum Tubes	24	2.12	.69
Need First	25	3.38	.85
Need Now	26	3.39	.70
Transistor Circuits	27	2.44	.93
Need First	28	2.91	.96
Need Now	29	2.70	1.13
Integrated Circuits	30	3.00	.82
Need First	31	3.53	.84
Need Now	32	2.88	1.18
Test Equipment	33	2.50	.96
Need First	34	2.42	1.14
Need Now	35	2.38	1.04
Pulse Circuits	36	3.00	.62
Need First	37	3.34	.90
Need Now	38	3.06	1.09
Logic Circuits	39	2.90	.70
Need First	40	3.31	1.00
Need Now	41	2.81	1.22
Communication Circuits	42	2.97	.71
Need First	43	3.42	.75
Need Now	44	3.19	1.06
Industiral Electronics	45	2.77	.72
Need First	46	2.88	.87
Need Now	47	2.80	1.19
Microwave Theory	48	3.23	.73
Need First	49	3.80	.60
Need Now	50	3.66	.71
Trouble Shooting	51	2.84	.94
Need First	52	2.39	1.17
Need Now	53	2.18	1.28
Binary Arithmetic	54	2.74	.86
Need First	55	3.59	.50
Need Now	56	2.87	1.08
Boolean Algebra	57	2.72	1.09
Need First	58	3.84	.37
Need Now	59	3.16	1.04

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1965 EET 77

Variable	Variable No.	Mean	S.D.
Dependents	1	1.88	1.01
First Salary	2	472	55.2
First Miles	3	128	120
Present Salary	4	728	195
Present Miles	5	308	772
Job Changes	6	1.35	.59
Different Jobs	7	1.72	.70
Freshman Math	8	2.10	.79
Need First	9	2.10	.90
Need Now	10	1.85	.95
Need Future	11	1.90	.97
Freshman Science	12	2.23	.67
Need First	13	2.45	1.01
Need Now	14	2.33	1.05
Need Future	15	2.29	.98
Freshman English	16	2.25	.91
Need First	17	2.15	.94
Need Now	18	2.03	.86
Need Future	19	1.69	.73
Social Science	20	2.34	.85
Need First	21	3.21	.83
Need Now	22	2.90	.91
Need Future	23	2.54	1.00
Vacuum Tubes	24	2.08	.75
Need First	25	3.38	.63
Need Now	26	3.28	.89
Transistor Circuits	27	2.59	.85
Need First	28	2.72	1.07
Need Now	29	2.51	1.14
Integrated Circuits	30	2.60	.94
Need First	31	3.05	1.07
Need Now	32	2.75	1.18
Test Equipment	33	2.26	.79
Need First	34	2.41	1.04
Need Now	35	2.54	1.17
Pulse Circuits	36	2.62	.85
Need First	37	2.70	1.24
Need Now	38	2.89	1.15
Logic Circuits	39	2.73	.90
Need First	40	2.79	1.28
Need Now	41	2.74	1.21
Communication Circuits	42	2.93	.81
Need First	43	3.05	1.06
Need Now	44	3.00	1.16
Industrial Electronics	45	2.28	.80
Need First	46	2.68	1.09
Need Now	47	2.71	1.04
Microwave Theory	48	3.18	.81
Need First	49	2.67	.59
Need Now	50	3.39	.99
Trouble Shooting	51	2.71	1.12
Need First	52	2.19	1.21
Need Now	53	2.22	1.20
Binary Arithmetic	54	2.47	.86
Need First	55	3.15	1.09
Need Now	56	2.82	1.17
Boolean Algebra	57	2.90	.79
Need First	58	3.47	.88
Need Now	59	3.22	1.07

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1966 EET 78

Variable	Variable No.	Mean	S.D.
Dependents	1	1.89	.87
First Salary	2	618	547
First Miles	3	286	584
Present Salary	4	886	806
Present Miles	5	456	1043
Job Changes	6	1.75	.97
Different Jobs	7	1.87	.85
Freshman Math	8	2.04	.79
Need First	9	2.08	.88
Need Now	10	1.81	.88
Need Future	11	1.81	.88
Freshman Science	12	2.11	.68
Need First	13	2.54	.98
Need Now	14	2.41	.93
Need Future	15	2.17	1.06
Freshman English	16	2.02	.77
Need First	17	2.33	.94
Need Now	18	1.91	.93
Need Future	19	1.91	.89
Social Science	20	2.31	.76
Need First	21	3.22	.85
Need Now	22	2.91	1.00
Need Future	23	2.83	1.00
Vacuum Tubes	24	2.25	.72
Need First	25	3.34	.67
Need Now	26	3.30	.88
Transistor Circuits	27	2.34	.79
Need First	28	2.71	1.16
Need Now	29	2.40	1.24
Integrated Circuits	30	2.78	.93
Need First	31	3.80	1.21
Need Now	32	2.71	1.17
Test Equipment	33	2.36	.91
Need First	34	2.17	1.17
Need Now	35	2.37	1.36
Pulse Circuits	36	2.57	.80
Need First	37	3.02	1.06
Need Now	38	2.95	1.76
Logic Circuits	39	2.74	.95
Need First	40	3.22	1.36
Need Now	41	2.67	1.25
Communication Circuits	42	2.65	.80
Need First	43	3.25	1.13
Need Now	44	3.24	.93
Industrial Electronics	45	2.23	.71
Need First	46	3.11	1.05
Need Now	47	2.98	1.14
Microwave Theory	48	2.94	.80
Need First	49	3.48	1.00
Need Now	50	3.43	.95
Trouble Shooting	51	2.54	.90
Need First	52	2.32	1.18
Need Now	53	2.28	1.30
Binary Arithmetic	54	2.33	.96
Need First	55	3.11	1.08
Need Now	56	1.06	1.1
Boolean Algebra	57	2.50	.91
Need First	58	3.41	.99
Need Now	59	3.12	1.08

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1967 EET 79

Variable	Variable No.	Mean	S.D.
Dependents	1	1.71	.69
First Salary	2	537	64.7
First Miles	3	145	177
Present Salary	4	664	150
Present Miles	5	585	1727
Job Changes	6	1.33	.49
Different Jobs	7	1.30	.52
Freshman Math	8	1.96	.68
Need First	9	2.23	.86
Need Now	10	2.30	.82
Need Future	11	1.81	.90
Freshman Science	12	2.24	.74
Need First	13	2.61	.88
Need Now	14	2.46	.91
Need Future	15	2.20	.92
Freshman English	16	2.13	.87
Need First	17	2.38	.89
Need Now	18	2.19	.89
Need Future	19	1.96	.78
Social Science	20	2.32	.78
Need First	21	3.30	.62
Need Now	22	3.11	.79
Need Future	23	2.78	.92
Vacuum Tubes	24	1.89	.63
Need First	25	3.38	.74
Need Now	26	3.26	1.01
Transistor Circuits	27	2.06	.89
Need First	28	2.77	1.00
Need Now	29	2.68	1.07
Integrated Circuits	30	2.42	.90
Need First	31	3.18	1.03
Need Now	32	3.13	.99
Test Equipment	33	2.17	.94
Need First	34	2.13	1.03
Need Now	35	2.21	1.06
Pulse Circuits	36	2.25	.84
Need First	37	3.11	1.01
Need Now	38	3.04	1.10
Logic Circuits	39	2.47	.93
Need First	40	3.26	.95
Need Now	41	3.21	1.00
Communication Circuits	42	2.55	.99
Need First	43	3.38	.81
Need Now	44	3.13	1.06
Industrial Electronics	45	2.42	.82
Need First	46	2.58	1.06
Need Now	47	2.51	1.08
Microwave Theory	48	2.53	.99
Need First	49	3.65	.61
Need Now	50	3.51	.88
Trouble Shooting	51	2.66	.97
Need First	52	2.49	1.12
Need Now	53	2.33	1.11
Binary Arithmetic	54	2.76	.83
Need First	55	3.30	.88
Need Now	56	3.27	.85
Boolean Algebra	57	3.06	.97
Need First	58	3.50	.78
Need Now	59	3.55	.75

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1968 EET 80

Variable	Variable No.	Mean	S.D.
Dependents	1	1.50	.69
First Salary	2	545	99.5
First Miles	3	184	343
Present Salary	4	549	220
Present Miles	5	1125	2733
Job Changes	6	1.18	.39
Different Jobs	7	1.34	.59
Freshman Math	8	1.93	.85
Need First	9	2.34	.90
Need Now	10	2.30	.89
Need Future	11	1.82	.80
Freshman Science	12	2.12	.71
Need First	13	2.76	.95
Need Now	14	2.75	.95
Need Future	15	2.35	.92
Freshman English	16	2.14	.78
Need First	17	2.42	.91
Need Now	18	2.33	.93
Need Future	19	1.98	.87
Social Science	20	2.41	.65
Need First	21	3.34	.76
Need Now	22	3.20	.75
Need Future	23	2.90	.79
Vacuum Tubes	24	2.14	.81
Need First	25	3.49	.85
Need Now	26	3.20	1.03
Transistor Circuits	27	1.98	.88
Need First	28	3.02	1.13
Need Now	29	2.37	1.23
Integrated Circuits	30	2.44	.94
Need First	31	3.24	1.02
Need Now	32	2.84	1.24
Test Equipment	33	2.19	.81
Need First	34	2.66	1.22
Need Now	35	2.26	1.28
Pulse Circuits	36	2.41	.84
Need First	37	3.33	.97
Need Now	38	2.65	1.17
Logic Circuits	39	2.49	.82
Need First	40	3.48	.90
Need Now	41	2.83	1.20
Communication Circuits	42	2.93	.94
Need First	43	3.37	.95
Need Now	44	2.98	1.09
Industrial Electronics	45	2.42	.81
Need First	46	3.32	.89
Need Now	47	3.14	.98
Microwave Theory	48	2.82	.96
Need First	49	3.60	.70
Need Now	50	3.14	1.11
Trouble Shooting	51	3.02	.94
Need First	52	2.75	1.22
Need Now	53	2.30	1.28
Binary Arithmetic	54	2.76	.83
Need First	55	3.39	.96
Need Now	56	3.13	1.12
Boolean Algebra	57	2.67	.96
Need First	58	3.62	.78
Need Now	59	3.37	.96

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1969 EET 81

Variables	Variable No.	Mean	S.D.
Dependents	1	1.57	.73
First Salary	2	575	83.9
First Miles	3	146	177
Present Salary	4	605	103.5
Present Miles	5	206	441
Job Changes	6	1.29	.47
Different Jobs	7	1.31	.52
Freshman Math	8	1.93	.65
Need First	9	2.22	.93
Need Now	10	2.18	.96
Need Future	11	1.55	.72
Freshman Science	12	2.15	.68
Need First	13	2.42	.88
Need Now	14	2.45	.85
Need Future	15	2.03	.88
Freshman English	16	2.23	.79
Need First	17	2.51	.86
Need Now	18	2.42	.90
Need Future	19	2.09	.73
Social Science	20	2.39	.65
Need First	21	3.15	.75
Need Now	22	3.22	.72
Need Future	23	2.82	.83
Vacuum Tubes	24	2.20	.93
Need First	25	3.59	.64
Need Now	26	3.63	.63
Transistor Circuits	27	1.57	.65
Need First	28	2.88	1.05
Need Now	29	2.78	1.11
Integrated Circuits	30	2.11	.95
Need First	31	3.13	1.05
Need Now	32	3.00	1.10
Test Equipment	33	1.74	.76
Need First	34	2.52	1.11
Need Now	35	2.43	1.21
Pulse Circuits	36	1.96	.78
Need First	37	3.22	.90
Need Now	38	3.16	1.03
Logic Circuits	39	1.90	.84
Need First	40	3.27	.95
Need Now	41	3.03	1.08
Communication Circuits	42	2.63	1.04
Need First	43	3.55	.72
Need Now	44	3.39	.93
Industrial Electronics	45	2.22	.83
Need First	46	3.09	.97
Need Now	47	2.95	1.00
Microwave Theory	48	2.66	.97
Need First	49	3.69	.62
Need Now	50	3.65	.63
Trouble Shooting	51	2.50	1.02
Need First	52	2.65	1.09
Need Now	53	2.6	1.13
Binary Arithmetic	54	2.20	.88
Need First	55	3.27	.97
Need Now	56	3.11	1.09
Boolean Algebra	57	2.26	.94
Need First	58	3.40	.92
Need Now	59	3.29	1.01

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1955 DDT 82
N = 5 or less are disregarded 2: QUI responses of "not taught" have been excluded

Variable	Variable No.	Mean	S.D.
Dependents	1	3.58	1.56
First Salary	2	335	40.5
First Miles	3	169	171
Present Salary	4	894	216
Present Miles	5	142	178
Job Changes	6	267	.82
Different Jobs	7	3.33	2.27
Freshman Math	8	1.62	.65
Need First	9	2.00	.88
Need Now	10	1.86	1.03
Need Future	11	1.82	1.08
Freshman Science	12	1.92	.67
Need First	13	2.23	.93
Need Now	14	2.29	1.07
Need Future	15	2.27	1.10
Freshman English	16	1.46	.66
Need First	17	2.00	.88
Need Now	18	1.79	.70
Need Future	19	1.58	.67
Social Science	20	2.80	.92
Need First	21	2.82	1.08
Need Now	22	2.73	1.10
Need Future	23	2.20	1.03
Sketching	24	2.23	.83
Need First	25	2.57	.85
Need Now	26	2.14	1.10
Layout	27	2.07	.73
Need First	28	1.71	.83
Need Now	29	1.64	1.15
Graphic Solutions	30	2.00	.68
Need First	31	2.71	.91
Need Now	32	2.50	1.16
Kinematics	33	2.31	.95
Need First	34	3.14	.66
Need Now	35	3.21	.70
Strength of Materials	36	1.92	.76
Need First	37	2.57	1.02
Need Now	38	2.29	1.00
Static Analysis	39	2.33	.78
Need First	40	2.86	1.03
Need Now	41	2.64	1.08
Dynamic Analysis	42	2.45	.82
Need First	43	3.07	1.07
Need Now	44	2.86	1.03
Analysis of Structures	45	2.42	.67
Need First	46	3.07	1.07
Need Now	47	2.79	1.31
Manufacturing Process	48	2.00	.77
Need First	49	2.93	.92
Need Now	50	2.36	1.09
Product Design	51	2.25	.45
Need First	52	2.50	1.02
Need Now	53	2.07	1.14
Report Writing	54	2.17	.72
Need First	55	3.14	1.10
Need Now	56	2.21	1.05
Computer Programming	57	0	0.0
Need First	58	4.00	0.0
Need Now	59	3.83	.39

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1956 DDT 83

Variable	Variable No.	Mean	S.D.
Dependents	1	3.32	.95
First Salary	2	359	37.3
First Miles	3	259	690
Present Salary	4	914	142
Present Miles	5	107	282
Job Changes	6	2.56	2.46
Different Jobs	7	3.33	2.35
Freshman Math	8	1.88	.60
Need First	9	1.82	.88
Need Now	10	1.76	.90
Need Future	11	1.80	.86
Freshman Science	12	2.33	.72
Need First	13	2.81	.91
Need Now	14	2.38	.96
Need Future	15	2.14	.86
Freshman English	16	1.94	.83
Need First	17	2.24	.92
Need Now	18	1.83	.73
Need Future	19	1.47	.64
Social Science	20	2.43	.51
Need First	21	3.13	.52
Need Now	22	2.86	.77
Need Future	23	2.71	.73
Sketching	24	2.36	.67
Need First	25	2.67	1.14
Need Now	26	2.22	.94
Layout	27	1.85	.50
Need First	28	1.94	1.06
Need Now	29	2.33	1.33
Graphic Solutions	30	2.12	.60
Need First	31	3.22	1.00
Need Now	32	3.33	.77
Kinematics	33	2.71	1.05
Need First	34	3.39	.69
Need Now	35	3.28	.75
Strength of Materials	36	2.00	.71
Need First	37	2.67	.97
Need Now	38	2.33	1.03
Static Analysis	39	2.12	.60
Need First	40	3.33	.69
Need Now	41	3.00	1.03
Dynamic Analysis	42	2.19	.54
Need First	43	3.39	.61
Need Now	44	3.06	.87
Analysis of Structures	45	2.06	.68
Need First	46	3.61	.61
Need Now	47	3.44	.62
Manufacturing Process	48	2.31	1.01
Need First	49	2.89	1.02
Need Now	50	2.50	.86
Product Design	51	2.46	.78
Need First	52	2.83	1.20
Need Now	53	2.50	1.10
Report Writing	54	2.33	.89
Need First	55	3.22	.94
Need Now	56	2.22	1.06
Computer Programming	57	0.0	0.0
Need First	58	3.83	.51
Need Now	59	3.44	.70

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1957 DDT 84

Variable	Variable No.	Mean	S.D.
Dependents	1	3.76	1.71
First Salary	2	377	82.6
First Miles	3	87.5	140
Present Salary	4	940	191
Present Miles	5	108	179
Job Changes	6	2.00	.73
Different Jobs	7	2.67	1.54
Freshman Math	8	1.79	.73
Need First	9	1.59	.74
Need Now	10	1.91	.90
Need Future	11	1.88	.91
Freshman Science	12	2.04	.66
Need First	13	2.52	1.01
Need Now	14	2.52	1.05
Need Future	15	2.46	1.07
Freshman English	16	1.64	.60
Need First	17	2.25	1.02
Need Now	18	1.78	.91
Need Future	19	1.52	.81
Social Science	20	2.11	.57
Need First	21	2.95	.85
Need Now	22	2.58	1.12
Need Future	23	2.26	1.10
Sketching	24	2.26	.86
Need First	25	2.42	1.09
Need Now	26	2.24	1.09
Layout	27	2.00	.71
Need First	28	2.06	1.10
Need Now	29	2.41	1.13
Graphic Solutions	30	2.03	.76
Need First	31	3.09	.87
Need Now	32	3.50	.66
Kinematics	33	2.35	.95
Need First	34	3.06	.81
Need Now	35	3.26	.86
Strength of Materials	36	2.06	.78
Need First	37	2.29	.94
Need Now	38	2.44	.99
Static Analysis	39	2.21	.90
Need First	40	2.85	1.03
Need Now	41	2.97	1.02
Dynamic Analysis	42	2.28	.98
Need First	43	3.18	1.01
Need Now	44	3.33	.82
Analysis of Structures	45	2.17	.93
Need First	46	2.94	1.06
Need Now	47	2.97	.92
Manufacturing Process	48	2.36	.74
Need First	49	3.06	.85
Need Now	50	2.32	1.07
Product Design	51	2.52	.87
Need First	52	3.00	1.02
Need Now	53	2.62	1.18
Report Writing	54	2.22	.80
Need First	55	3.09	.98
Need Now	56	2.21	1.08
Computer Programming	57	0.0	0.0
Need First	58	3.91	.39
Need Now	59	3.36	1.03

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1958 DDT 85

Variable	Variable No.	Mean	S.D.
Dependents	1	3.34	1.14
First Salary	2	329	74.4
First Miles	3	258	549
Present Salary	4	950	167
Present Miles	5	153	226
Job Changes	6	2.85	2.30
Different Jobs	7	2.87	1.75
Freshman Math	8	1.88	.76
Need First	9	1.75	.86
Need Now	10	1.69	.80
Need Future	11	1.87	.96
Freshman Science	12	2.08	.62
Need First	13	2.48	.94
Need Now	14	2.43	.94
Need Future	15	2.54	.95
Freshman English	16	1.75	.60
Need First	17	2.15	.92
Need Now	18	1.71	.82
Need Future	19	1.60	.74
Social Science	20	2.41	.74
Need First	21	2.79	.89
Need Now	22	2.49	.88
Need Future	23	2.19	.94
Sketching	24	2.22	.79
Need First	25	2.60	1.01
Need Now	26	2.17	1.01
Layout	27	1.83	.64
Need First	28	2.15	1.09
Need Now	29	2.36	1.07
Graphic Solutions	30	1.93	.76
Need First	31	3.00	.91
Need Now	32	2.75	1.02
Kinematics	33	2.33	.90
Need First	34	3.31	.72
Need Now	35	3.10	.93
Strength of Materials	36	1.75	.67
Need First	37	2.73	1.05
Need Now	38	2.40	1.16
Static Analysis	39	2.02	.69
Need First	40	2.96	.97
Need Now	41	2.81	1.07
Dynamic Analysis	42	2.31	.78
Need First	43	3.32	.86
Need Now	44	3.11	1.05
Analysis of Structures	45	2.09	.77
Need First	46	3.19	.89
Need Now	47	2.86	1.15
Manufacturing Process	48	2.35	.95
Need First	49	2.87	1.03
Need Now	50	2.19	1.10
Product Design	51	2.39	.86
Need First	52	2.88	1.14
Need Now	53	2.56	1.17
Report Writing	54	2.34	.91
Need First	55	3.16	.95
Need Now	56	1.87	.99
Computer Programming	57	0.0	0.0
Need First	58	3.92	.28
Need Now	59	3.49	.80

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1959 DDT 86

Variable	Variable No.	Mean	S.D.
Dependents	1	3.04	1.52
First Salary	2	364	64.4
First Miles	3	365	815
Present Salary	4	946	224
Present Miles	5	376	767
Job Changes	6	2.18	1.60
Different Jobs	7	3.26	2.14
Freshman Math	8	1.74	.64
Need First	9	1.86	.82
Need Now	10	1.72	.80
Need Future	11	1.98	.93
Freshman Science	12	2.17	.77
Need First	13	2.54	.85
Need Now	14	2.33	.93
Need Future	15	2.19	.95
Freshman English	16	1.79	.78
Need First	17	2.38	.86
Need Now	18	1.87	.85
Need Future	19	1.69	.77
Social Science	20	2.51	.97
Need First	21	3.19	.51
Need Now	22	2.65	.83
Need Future	23	2.48	.86
Sketching	24	2.29	.83
Need First	25	2.62	.97
Need Now	26	2.11	.98
Layout	27	1.94	.67
Need First	28	2.04	.93
Need Now	29	2.25	1.07
Graphic Solutions	30	2.33	.94
Need First	31	2.96	1.07
Need Now	32	2.80	1.06
Kinematics	33	2.44	1.05
Need First	34	3.26	.98
Need Now	35	3.14	.90
Strength of Materials	36	2.06	.79
Need First	37	2.74	1.12
Need Now	38	2.28	1.11
Static Analysis	39	2.27	.90
Need First	40	2.98	1.09
Need Now	41	2.64	1.20
Dynamic Analysis	42	2.56	.99
Need First	43	3.16	.96
Need Now	44	2.86	1.17
Analysis of Structures	45	2.29	.89
Need First	46	2.99	1.06
Need Now	47	2.75	1.16
Manufacturing Process	48	2.24	.90
Need First	49	2.81	1.10
Need Now	50	2.11	1.13
Product Design	51	2.23	.84
Need First	52	2.78	1.05
Need Now	53	2.12	1.10
Report Writing	54	2.38	.98
Need First	55	3.09	1.06
Need Now	56	2.11	1.15
Computer Programming	57	0.0	0.0
Need First	58	3.96	.21
Need Now	59	3.47	.93

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1960 DDT 87

Variable	Variable No.	Mean	S.D.
Dependents	1	3.50	1.00
First Salary	2	382	47.1
First Miles	3	275	536
Present Salary	4	943	262
Present Miles	5	341	711
Job Changes	6	1.70	.86
Different Jobs	7	2.94	.92
Freshman Math	8	1.84	.81
Need First	9	1.94	.84
Need Now	10	1.81	.97
Need Future	11	1.72	.99
Freshman Science	12	2.16	.58
Need First	13	2.59	.98
Need Now	14	2.63	1.04
Need Future	15	2.28	1.08
Freshman English	16	1.94	.86
Need First	17	2.25	.92
Need Now	18	1.69	.86
Need Future	19	1.69	.93
Social Science	20	2.60	.76
Need First	21	3.07	.84
Need Now	22	2.86	.92
Need Future	23	2.47	.90
Sketching	24	2.35	.80
Need First	25	2.75	1.08
Need Now	26	2.38	1.13
Layout	27	1.88	.49
Need First	28	2.21	1.17
Need Now	29	2.82	1.21
Graphic Solutions	30	2.27	.87
Need First	31	3.19	.95
Need Now	32	3.35	.71
Kinematics	33	2.13	.94
Need First	34	3.34	.79
Need Now	35	3.47	.62
Strength of Materials	36	2.09	.72
Need First	37	3.15	.87
Need Now	38	2.85	1.18
Static Analysis	39	2.16	.64
Need First	40	3.25	.72
Need Now	41	3.03	1.08
Dynamic Analysis	42	2.50	.78
Need First	43	3.47	.67
Need Now	44	3.16	.88
Analysis of Structures	45	2.45	.74
Need First	46	3.44	.72
Need Now	47	3.19	.90
Manufacturing Process	48	2.76	.99
Need First	49	2.91	.96
Need Now	50	2.70	1.64
Product Design	51	2.38	.91
Need First	52	2.68	1.08
Need Now	53	2.61	1.20
Report Writing	54	2.86	.96
Need First	55	3.28	.89
Need Now	56	1.97	1.00
Computer Programming	57	0.0	0.0
Need First	58	3.93	.27
Need Now	59	2.89	1.13

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1961 DDT 88

Variable	Variable No.	Mean	S.D.
Dependents	1	2.75	.99
First Salary	2	399	67.7
First Miles	3	618	956
Present Salary	4	870	197
Present Miles	5	373	1357
Job Changes	6	2.47	.96
Different Jobs	7	2.93	1.41
Freshman Math	8	1.89	.75
Need First	9	1.82	.94
Need Now	10	1.75	.93
Need Future	11	1.93	1.00
Freshman Science	12	2.37	.69
Need First	13	2.43	.92
Need Now	14	2.43	.84
Need Future	15	2.37	.88
Freshman English	16	1.78	.58
Need First	17	2.14	.89
Need Now	18	1.64	.78
Need Future	19	1.35	.49
Social Science	20	2.46	.72
Need First	21	3.04	.69
Need Now	22	2.75	1.04
eed Future	23	2.38	1.02
Sketching	24	2.17	.56
Need First	25	2.64	.87
Need Now	26	2.11	.99
Layout	27	2.00	.68
Need First	28	1.79	.88
Need Now	29	2.61	1.10
Graphic Solutions	30	2.00	.68
Need First	31	3.07	.86
Need Now	32	3.14	.85
Kinematics	33	2.04	.76
Need First	34	3.43	.74
Need Now	35	3.21	.88
Strength of Materials	36	1.96	.81
Need First	37	3.00	.90
Need Now	38	2.75	1.00
Static Analysis	39	2.19	.69
Need First	40	3.53	.85
Need Now	41	2.96	.89
Dynamic Analysis	42	2.52	.59
Need First	43	3.46	.76
Need Now	44	3.08	.98
Analysis of Structures	45	2.44	.77
Need First	46	3.46	.76
Need Now	47	3.04	1.04
Manufacturing Process	48	2.35	.75
Need First	49	3.00	.72
Need Now	50	2.44	1.01
Product Design	51	2.40	.65
Need First	52	2.93	.94
Need Now	53	2.68	1.06
Report Writing	54	2.74	1.04
Need First	55	3.38	.80
Need Now	56	2.31	1.23
Computer Programming	57	0.0	0.0
Need First	58	3.78	.52
Need Now	59	3.09	1.12

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1962 DDT 89

Variable	Variable No.	Mean	S.D.
Dependents	1	2.54	1.27
First Salary	2	409	79
First Miles	3	372	761
Present Salary	4	780	134
Present Miles	5	304	669
Job Changes	6	1.77	.93
Different Jobs	7	2.16	1.25
Freshman Math	8	1.86	.64
Need First	9	2.38	.82
Need Now	10	2.03	.78
Need Future	11	2.15	1.03
Freshman Science	12	2.32	.90
Need First	13	2.89	.69
Need Now	14	2.68	.86
Need Future	15	2.44	1.05
Freshman English	16	1.90	.86
Need First	17	2.45	1.02
Need Now	18	2.00	.93
Need Future	19	1.89	1.03
Social Science	20	2.36	.79
Need First	21	3.13	.69
Need Now	22	2.78	1.00
Need Future	23	2.59	1.10
Sketching	24	2.44	.92
Need First	25	2.71	.66
Need Now	26	2.67	.96
Layout	27	1.90	.67
Need First	28	2.03	1.02
Need Now	29	2.76	1.09
Graphic Solutions	30	2.03	.94
Need First	31	3.14	.92
Need Now	32	3.03	1.09
Kinematics	33	2.26	.94
Need First	34	3.54	.74
Need Now	35	3.25	.89
Strength of Materials	36	2.07	.80
Need First	37	3.31	.71
Need Now	38	2.72	1.16
Static Analysis	39	2.07	.72
Need First	40	3.45	.69
Need Now	41	2.97	1.02
Dynamic Analysis	42	2.11	.88
Need First	43	3.43	.84
Need Now	44	3.14	1.04
Analysis of Structures	45	2.31	.79
Need First	46	3.48	.83
Need Now	47	3.24	1.09
Manufacturing Process	48	2.43	.88
Need First	49	3.04	.74
Need Now	50	2.82	1.12
Product Design	51	2.07	.83
Need First	52	2.79	.93
Need Now	53	2.52	1.33
Report Writing	54	2.57	.85
Need First	55	3.41	.84
Need Now	56	2.44	1.25
Computer Programming	57	0.0	0.0
Need First	58	3.83	.39
Need Now	59	3.13	1.29

MEANS STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1963 DDT

Variable	Variable No.	Mean	S.D.
Dependents	1	2.42	.93
First Salary	2	416	55.9
First Miles	3	300	525
Present Salary	4	849	148
Present Miles	5	268	594
Job Changes	6	1.80	.85
Different Jobs	7	2.36	1.10
Freshman Math	8	1.96	.78
Need First	9	1.91	.84
Need Now	10	1.74	.76
Need Future	11	1.71	.76
Freshman Science	12	2.24	.79
Need First	13	2.71	.86
Need Now	14	2.39	.85
Need Future	15	2.18	.87
Freshman English	16	2.36	.86
Need First	17	2.42	.84
Need Now	18	1.96	.92
Need Future	19	1.67	.81
Social Science	20	2.57	.68
Need First	21	3.25	.83
Need Now	22	2.78	.96
Need Future	23	2.54	.99
Sketching	24	2.46	.75
Need First	25	2.67	.90
Need Now	26	1.96	.84
Layout	27	1.87	.56
Need First	28	1.98	.93
Need Now	29	2.36	1.09
Graphic Solutions	30	2.09	.77
Need First	31	3.34	.65
Need Now	32	3.08	.85
Kinematics	33	2.40	.79
Need First	34	3.60	.53
Need Now	35	3.30	.80
Strength of Materials	36	2.00	.71
Need First	37	3.05	.82
Need Now	38	2.32	.96
Static Analysis	39	2.17	.72
Need First N	40	3.37	.77
Need Now	41	2.65	1.12
Dynamic Analysis	42	2.40	.68
Need First	43	3.53	.76
Need Now	44	2.74	1.06
Analysis of Structures	45	2.19	.71
Need First	46	3.33	.91
Need Now	47	2.69	1.09
Manufacturing Process	48	2.43	.94
Need First	49	2.92	.92
Need Now	50	2.26	1.08
Product Design	51	2.40	.90
Need First	52	2.98	.92
Need Now	53	2.44	1.07
Report Writing	54	2.97	.76
Need First	55	3.33	.93
Need Now	56	2.20	1.06
Computer Programming	57	0.0	0.0
Need First	58	3.61	.84
Need Now	59	0.0	0.0

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1964 DDT 91

Variable	Variable No.	Mean	S.D.
Dependents	1	2.17	.85
First Salary	2	401	72.9
First Miles	3	41.3	53.7
Present Salary	4	745	223
Present Miles	5	144	516
Job Changes	6	2.13	2.13
Different Jobs	7	2.45	1.74
Freshman Math	8	1.86	.67
Need First	9	1.73	.87
Need Now	10	1.41	.64
Need Future	11	1.56	.84
Freshman Science	12	2.26	.92
Need First	13	2.74	.82
Need Now	14	2.43	.95
Need Future	15	2.42	.94
Freshman English	16	2.17	.66
Need First	17	2.46	.93
Need Now	18	1.92	.83
Need Future	19	1.75	.81
Social Science	20	2.59	.66
Need First	21	3.17	.66
Need Now	22	2.80	.93
Need Future	23	2.74	.96
Sketching	24	2.00	.73
Need First	25	2.58	1.02
Need Now	26	2.33	.96
Layout	27	1.71	.58
Need First	28	2.24	1.09
Need Now	29	2.38	1.14
Graphic Solutions	30	1.89	.91
Need First	31	2.97	.69
Need Now	32	2.97	.83
Kinematics	33	2.26	.85
Need First	34	3.41	.64
Need Now	35	3.24	.68
Strength of Materials	36	2.03	.99
Need First	37	2.84	.73
Need Now	38	2.43	1.04
Static Analysis	39	2.00	.96
Need First	40	3.08	.87
Need Now	41	2.58	1.25
Dynamic Analysis	42	2.07	.90
Need First	43	3.24	.85
Need Now	44	2.66	1.19
Analysis of Structures	45	2.03	.83
Need First	46	2.92	1.08
Need Now	47	2.61	1.08
Manufacturing Process	48	2.40	.88
Need First	49	2.86	1.03
Need Now	50	2.46	1.24
Product Design	51	2.33	1.04
Need First	52	2.60	1.12
Need Now	53	2.40	1.35
Report Writing	54	2.56	.92
Need First	55	3.18	.90
Need Now	56	2.29	1.05
Computer Programming	57	0.0	0.0
Need First	58	3.80	.61
Need Now	59	3.35	.95

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1965 DDT 92

Variable	Variable No.	Mean	S.D.
Dependents	1	2.12	1.13
First Salary	2	448	92.7
First Miles	3	97	146
Present Salary	4	725	190
Present Miles	5	616	2300
Job Changes	6	1.93	1.33
Different Jobs	7	2.30	1.27
Freshman Math	8	1.89	.63
Need First	9	1.75	.87
Need Now	10	1.71	.81
Need Future	11	1.60	.85
Freshman Science	12	2.08	.55
Need First	13	2.66	.83
Need Now	14	2.53	.89
Need Future	15	2.11	.89
Freshman English	16	2.19	.84
Need First	17	2.35	.91
Need Now	18	1.93	.86
Need Future	19	1.69	.69
Social Science	20	2.15	.72
Need First	21	3.04	.79
Need Now	22	2.73	.95
Need Future	23	2.44	.96
Sketching	24	2.20	.74
Need First	25	2.42	.93
Need Now	26	2.13	1.00
Layout	27	1.87	.67
Need First	28	1.95	.93
Need Now	29	2.37	1.06
Graphic Solutions	30	1.98	.76
Need First	31	2.87	.91
Need Now	32	2.83	.98
Kinematics	33	2.22	.88
Need First	34	3.31	.66
Need Now	35	3.13	.75
Strength of Materials	36	2.02	.89
Need First	37	2.73	.85
Need Now	38	2.65	1.01
Static Analysis	39	2.02	.76
Need First	40	3.13	.72
Need Now	41	3.05	.91
Dynamic Analysis	42	2.33	.76
Need First	43	3.26	.71
Need Now	44	3.23	.87
Analysis of Structures	45	2.00	.74
Need First	46	3.11	.93
Need Now	47	3.06	.97
Manufacturing Process	48	2.15	.81
Need First	49	2.78	1.06
Need Now	50	2.28	1.14
Product Design	51	2.25	.81
Need First	52	2.72	1.12
Need Now	53	2.61	1.17
Report Writing	54	2.49	1.00
Need First	55	3.19	.94
Need Now	56	2.42	1.05
Computer Programming	57	3.05	.97
Need First	58	3.82	.43
Need Now	59	3.61	.78

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1966 DDT 93

Variable	Variable No.	Mean	S.D.
Dependents	1	1.88	.95
First Salary	2	486	64
First Miles	3	367	640
Present Salary	4	638	169
Present Miles	5	581	1701
Job Changes	6	1.14	.36
Different Jobs	7	1.42	.63
Freshman Math	8	2.09	1.00
Need First	9	1.77	.80
Need Now	10	1.75	.89
Need Future	11	1.64	.87
Freshman Science	12	2.24	.71
Need First	13	2.71	.97
Need Now	14	2.60	.99
Need Future	15	2.56	.97
Freshman English	16	2.16	.80
Need First	17	2.45	.95
Need Now	18	2.25	.84
Need Future	19	2.02	.85
Social Science	20	2.52	.79
Need First	21	3.18	.84
Need Now	22	3.09	.77
Need Future	23	2.80	.90
Sketching	24	2.23	.77
Need First	25	2.57	1.00
Need Now	26	2.51	.96
Layout	27	1.78	.59
Need First	28	2.20	1.11
Need Now	29	2.39	1.20
Graphic Solutions	30	2.20	.86
Need First	31	3.07	.90
Need Now	32	3.00	1.06
Kinematics	33	2.30	.92
Need First	34	3.05	.87
Need Now	35	2.89	.89
Strength of Materials	36	2.04	.94
Need First	37	2.73	.85
Need Now	38	2.61	1.04
Static Analysis	39	2.19	.82
Need First	40	3.00	.94
Need Now	41	2.88	1.10
Dynamic Analysis	42	2.49	.84
Need First	43	3.17	.91
Need Now	44	2.98	1.02
Analysis of Structures	45	2.21	.90
Need First	46	3.23	1.00
Need Now	47	3.09	.89
Manufacturing Process	48	2.42	.94
Need First	49	2.86	.97
Need Now	50	2.63	1.20
Product Design	51	2.38	.96
Need First	52	2.91	1.09
Need Now	53	2.69	1.24
Report Writing	54	2.84	.95
Need First	55	3.10	1.05
Need Now	56	2.55	1.15
Computer Programming	57	3.13	1.36
Need First	58	3.41	1.07
Need Now	59	3.26	1.05

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1967 DDT 94

Variable	Variable No.	Mean	S.D.
Dependents	1	1.85	1.08
First Salary	2	509	90.6
First Miles	3	211	339
Present Salary	4	634	138.6
Present Miles	5	380	1078
Job Changes	6	1.43	.65
Different Jobs	7	1.31	.53
Freshman Math	8	2.00	.72
Need First	9	1.83	.85
Need Now	10	1.73	.78
Need Future	11	1.60	.84
Freshman Science	12	2.20	.78
Need First	13	2.76	.67
Need Now	14	2.62	.81
Need Future	15	2.40	.86
Freshman English	16	2.17	.73
Need First	17	2.44	.84
Need Now	18	2.36	.93
Need Future	19	2.13	.97
Social Science	20	2.51	.63
Need First	21	3.35	.64
Need Now	22	3.32	.67
Need Future	23	2.87	.92
Sketching	24	2.20	.76
Need First	25	2.40	.89
Need Now	26	2.18	.90
Layout	27	1.89	.60
Need First	28	2.11	1.06
Need Now	29	2.24	1.07
Graphic Solutions	30	2.05	.62
Need First	31	3.09	.91
Need Now	32	2.69	.90
Kinematics	33	2.06	.73
Need First	34	3.20	.72
Need Now	35	3.09	.82
Strength of Materials	36	1.92	.72
Need First	37	2.91	.89
Need Now	38	2.80	.94
Static Analysis	39	2.15	.69
Need First	40	3.13	.86
Need Now	41	2.87	1.05
Dynamic Analysis	42	2.35	.77
Need First	43	3.26	.85
Need Now	44	3.00	.90
Analysis of Structures	45	2.21	.88
Need First	46	3.13	.98
Need Now	47	2.91	1.08
Manufacturing Process	48	2.49	.72
Need First	49	2.87	.88
Need Now	50	2.80	1.04
Product Design	51	2.33	.69
Need First	52	2.95	.91
Need Now	53	2.65	1.09
Report Writing	54	2.74	.85
Need First	55	3.00	1.04
Need Now	56	2.70	.96
Computer Programming	57	2.93	1.00
Need First	58	3.67	.75
Need Now	59	3.39	1.02

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1968 DDT 95

Variable	Variable No.	Mean	S.D.
Dependents	1	1.61	.66
First Salary	2	511	82.7
First Miles	3	388	1394
Present Salary	4	554	189
Present Miles	5	719	2255
Job Changes	6	1.30	.95
Different Jobs	7	1.32	.64
Freshman Math	8	J0	.75
Need First	9	2.02	.94
Need Now	10	2.04	1.05
Need Future	11	1.72	.90
Freshman Science	12	2.15	.77
Need First	13	2.95	.89
Need Now	14	2.95	.89
Need Future	15	2.47	.91
Freshman English	16	2.12	.76
Need First	17	2.68	.71
Need Now	18	2.56	.80
Need Future	19	2.19	.79
Social Science	20	2.25	.80
Need First	21	3.33	.70
Need Now	22	3.24	.75
Need Future	23	2.93	.86
Sketching	24	2.14	.80
Need First	25	2.69	.90
Need Now	26	2.60	1.05
Layout	27	1.87	.69
Need First	28	2.52	1.06
Need Now	29	2.79	1.10
Graphic Solutions	30	1.98	.74
Need First	31	3.18	.85
Need Now	32	3.05	1.01
Kinematics	33	2.12	.88
Need First	34	3.28	.88
Need Now	35	3.21	.90
Strength of Materials	36	2.08	.84
Need First	37	3.02	1.03
Need Now	38	2.95	1.08
Static Analysis	39	1.98	.71
Need First	40	3.32	.81
Need Now	41	3.14	.98
Dynamic Analysis	42	2.12	.65
Need First	43	3.39	.85
Need Now	44	3.30	.91
Analysis of Structures	45	1.86	.74
Need First	46	3.16	.85
Need Now	47	3.09	.94
Manufacturing Process	48	2.28	.90
Need First	49	3.25	.89
Need Now	50	3.05	.99
Product Design	51	2.15	.83
Need First	52	3.21	1.02
Need Now	53	3.20	.99
Report Writing	54	2.69	.92
Need First	55	3.37	.88
Need Now	56	2.98	1.07
Computer Programming	57	2.94	1.07
Need First	58	3.80	.53
Need Now	59	3.73	.60

MEANS AND STANDARD DEVIATIONS FOR SELECTED VARIABLES: 1969 DDT 96

Variable	Variable No.	Mean	S.D.
Dependents	1	1.22	.43
First Salary	2	547	95.9
First Miles	3	198	480
Present Salary	4	561	131
Present Miles	5	248	624
Job Changes	6	1.27	.64
Different Jobs	7	1.28	.59
Freshman Math	8	1.91	.75
Need First	9	1.96	.84
Need Now	10	1.88	.83
Need Future	11	1.54	.80
Freshman Science	12	2.41	.78
Need First	13	2.73	.88
Need Now	14	2.70	.86
Need Future	15	2.22	.92
Freshman English	16	2.09	.75
Need First	17	2.55	.95
Need Now	18	2.44	.89
Need Future	19	2.13	.93
Social Science	20	2.46	.84
Need First	21	3.36	.67
Need Now	22	3.33	.76
Need Future	23	3.03	.88
Sketching	24	2.23	.78
Need First	25	2.77	.86
Need Now	26	2.63	.91
Layout	27	1.82	.72
Need First	28	2.32	1.13
Need Now	29	2.34	1.19
Graphic Solutions	30	1.94	.72
Need First	31	3.08	.91
Need Now	32	2.89	.98
Kinematics	33	2.31	.94
Need First	34	3.40	.86
Need Now	35	3.21	.93
Strength of Materials	36	2.15	1.01
Need First	37	2.94	1.04
Need Now	38	2.83	1.08
Static Analysis	39	2.00	.82
Need First	40	3.24	.99
Need Now	41	3.10	1.07
Dynamic Analysis	42	2.18	.85
Need First	43	3.34	.87
Need Now	44	3.13	1.03
Analysis of Structures	45	1.93	.84
Need First	46	3.23	.96
Need Now	47	3.08	1.08
Manufacturing Process	48	2.11	.83
Need First	49	3.02	1.02
Need Now	50	3.84	1.05
Product Design	51	2.19	.90
Need First	52	3.08	.93
Need Now	53	2.95	.97
Report Writing	54	2.72	.81
Need First	55	3.29	1.03
Need Now	56	2.97	1.19
Computer Programming	57	3.00	.91
Need First	58	3.73	.67
Need Now	59	3.51	.95